

**EPA Superfund  
Record of Decision:**

**PALMETTO RECYCLING, INC.  
EPA ID: SCD037398120  
OU 01  
COLUMBIA, SC  
03/30/1995**

RECORD OF DECISION

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

March 1995

PALMETTO RECYCLING SUPERFUND SITE

COLUMBIA, RICHLAND COUNTY  
SOUTH CAROLINA

PREPARED BY:

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REGION IV  
ATLANTA, GEORGIA

## DECLARATION FOR THE RECORD OF DECISION

### SITE NAME AND LOCATION

Palmetto Recycling Site  
Columbia, Richland County, South Carolina

### STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Palmetto Recycling Superfund Site (the Site), located in Columbia, Richland County, South Carolina, which was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 U.S.C. §§ 9601 et seq., and, to the extent practicable, the National Oil and Hazardous Substances Contingency Plan (NCP), 40 C.F.R. Part 300 et seq. This decision is based on the administrative record file for this Site.

The State of South Carolina concurs with the selected remedy.

### ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Record of Decision (ROD), may present an imminent and substantial endangerment to public health, welfare, or the environment.

### DESCRIPTION OF THE SELECTED REMEDY

This remedial action addresses surface soil contamination.

The major components of the selected remedy include:

#### SURFACE SOIL - SOURCE CONTROL

- Excavation of contaminated surface soil that exceeds the remediation level, with verification sampling;
- The soil will be Toxicity Characteristic Leaching Procedure (TCLP) tested. If the soil exceeds the Land Disposal Restriction (LDR) of 5 ppm for Pb using the TCLP test, then the soil will be transported to a RCRA Subtitle C Facility where it will be pretreated in order to comply with the LDRs. If soil does not exceed the 5 ppm LDR, then the soil will be transported to a Subtitle D solid waste landfill and disposed of directly without pretreatment.
- The excavated area shall be backfilled with clean soil, properly recompact, and the land regraded to the natural slope. A vegetative cover will be established to minimize undue surface water runoff and minimize erosion.

### SITE MONITORING

- Groundwater monitoring will be conducted on an annual basis for at least five years to evaluate the site progress.

### ADDITIONAL SAMPLING

Based on public health concerns generated during the public comment period, EPA will obtain additional confirmation samples from the adjacent residential yards and from the dirt road that borders the site to the east to confirm the absence of soil contamination through offsite migration.

## STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost effective. This remedy utilizes permanent solutions and alternative treatment technology to the maximum extent practicable for this Site. However, because treatment of the contaminated soil was not found to be economical, the soil remediation component of this remedy does not satisfy the statutory preference for treatment as a principal element.

Since selection of this remedy will result in contaminated groundwater remaining on-site above health-based levels, but below Maximum Contaminant Levels, the Environmental Protection Agency (EPA) will conduct a review within five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

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Richard D. Green

Associate Director

Office of Superfund and Emergency Response

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Date

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**DECISION SUMMARY**  
**PALMETTO RECYCLING SUPERFUND SITE**  
**COLUMBIA, RICHLAND COUNTY, SOUTH CAROLINA**

**1.0 SITE LOCATION AND DESCRIPTION**

The Palmetto Recycling Site is located about 8 miles north of Columbia, South Carolina, in rural Richland County. The site is positioned between U.S. Routes 321 and 21 on the north side of Koon Store Road (State Road S-40-61). As shown in Figure 1-1, a more precise placement of the property location is given by the coordinates defined by the Universal Transverse Mercator Grid System, which are north 34° 7' 25" latitude and west 81° 00' 43" longitude (USGS, 1990). It occupies approximately 1.5 acres and is bounded by Koon Store Road to the south, an unnamed dirt road (and farther removed, Dry Fork Creek) to the east, an unnamed tributary of Dry Fork Creek to the north, and a residential lot and home to the west (see Figure 1-2).

Important physical features of the site include a 6-ft x 30-ft concrete walkway, an office building, a 135-ft by 170-ft asphalt pad with two concrete pads, a frame work shed, a concrete tank saddle, and an unnamed tributary that flows to Dry Fork Creek (see Figure 1-2). A previously, open excavation which was filled with water associated with abandoned truck scales was sampled during the RI field effort and found to be uncontaminated. The water was pumped to the unnamed tributary and the pit was backfilled with clean soil and graded to prevent ponding. A sparse cover of crushed rock was applied for soil erosion control. The waste materials in the suspected dumping areas have been removed. In addition, five groundwater monitor wells, installed by a contractor for the Palmetto Recycling, Inc. during a 1981 hydrogeological study, are located onsite. Dry Fork Creek, located east of the site, flows toward the south into the North Branch of Crane Creek. Dry Fork Creek receives drainage from an unnamed tributary located north of the site.

**2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES**

The property was purchased in 1979 by Palmetto Recycling, Inc. for the purpose of operating a battery recycling company. From 1979 to 1983, the facility was involved in the reclamation of lead from batteries. It is unknown what activities occurred onsite prior to 1979. A collection sump received wastewater contaminated with sulfuric acid from various plant operations. The sump consisted of a below-grade fiberglass tank in an unlined pit. Specific neutralization process details are unknown, but at some point, Palmetto Recycling started discharging wastewater of unknown composition to the local sewer system. In addition, a former employee reported that during operations, liquid wastes were dumped north of the site, outside the fenced area (Tanner, 1992).

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After discharging wastewater for an unknown period of time, Palmetto Recycling attempted to obtain a discharge permit. In 1981, the South Carolina Department of Health and Environmental Control (SCDHEC) denied applications by Palmetto Recycling, Inc. to operate a hazardous waste facility and to transport hazardous wastes. After this attempt, some waste liquids were sent offsite to an acid recycler and some were disposed of onsite. It is not known if these wastes were neutralized before shipment or onsite disposal. The quantities are also unknown. Plastic battery cases and lead plates were eventually sold to other companies as reusable materials (EPA, 1992).

A study conducted by the SCDHEC identified elevated concentrations of lead and iron in the groundwater samples collected next to the sump. High levels of lead, barium, and chromium were found in sediment from the unnamed stream that runs north of the site. The investigation also revealed the presence of elevated concentrations of lead in on-site soils. SCDHEC noted the presence of a five-foot deep, unlined acid pit containing 1,800 gallons of acid waste at the site, as well as 100 drums of caustic waste and an unstablized pile of battery casings.

On February 11, 1983, Palmetto Recycling filed for bankruptcy and Ryan Hovis was appointed trustee. In 1984, workers removing equipment from the site destroyed a section of the roof covering the on-site collection sump that collected wastewater containing lead oxide and sulfuric acid from the wash process. As a result of this incident, sump water percolated

through soils adjacent to the pit area. To address immediate health and environmental risks posed by the Site, three removal actions have occurred at the site. On April 25, 1984, 10,800 gallons of contaminated water were collected by Bryson Industries Services and taken to Alternate Energy Resources. On April 1984, SCDHEC informed the bankruptcy trustee that additional measures would be necessary to bring the site under control. Later in 1984, approximately 100 drums containing liquid caustic waste were removed from the site. On October 2, 1985, SCDHEC authorized Future Fuel Development, Inc., to remove site soils contaminated with lead and chromium. A total of 365 tons of soils were removed from various areas on-site and placed in off-site landfills during 1985 and 1986.

In 1986, EPA conducted a preliminary assessment of the site. EPA proposed the site for inclusion on the National Priorities List (NPL) in January 1987. The Palmetto Recycling site was formally added to the NPL in July 1987.

In 1992, EPA negotiated with parties it had identified as Potentially Responsible Parties (PRPs) for the site to conduct the RI/FS. An agreement was not reached between EPA and the parties.

Therefore, EPA conducted RI Field activities at the Site from April 1993 through June 1993 and from March 1994 through July 1994.

### **3.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION**

An information repository, which includes the Administrative Record, was established at the Northeast Regional Library in 1994, and is available to the public at both the information repository maintained at the Northeast Regional Library, 7490 Parklane Road, Columbia, South Carolina and at the EPA, Region IV Library, 345 Courtland Street, Atlanta, Georgia, 30365. The notice of availability of these documents was published in "THE STATE" on November 21, 1994.

A public comment period for the proposed plan was held from November 22, 1994 to January 23, 1995. A notice of an extension of the public comment period was published in "THE STATE" on December 18, 1994. In addition, a notice of the extension was mailed to all parties on the Site mailing list. A public meeting was held on December 6, 1994, where representatives from EPA answered questions regarding the Site and the remedial alternatives under consideration, which were discussed in the proposed plan.

EPA received oral comments during the December 6, 1994, public meeting, and written comments during the 60 day public comment period. Responses to the comments received by EPA are included in the Responsiveness Summary (Appendix A).

This ROD presents EPA's selected remedial action for the Site, chosen in accordance with CERCLA, as amended by SARA, and to the extent practicable, the NCP. The remedial action selection for this Site is based on information contained in the Administrative Record. The public and state participation requirements under Section 117 of CERCLA, 42 U.S.C. § 9617, have been met for this Site.

### **4.0 SCOPE AND ROLE OF THIS ACTION WITHIN SITE STRATEGY**

The purpose of the remedial alternative selected in this ROD is to reduce current and potential future risks at this Site. There is an unacceptable current risk present at the Site. The soil remedial action will remove current and potential future risks posed by the contaminated surface soil. This is the only ROD contemplated for this Site.

### **5.0 SUMMARY OF SITE CHARACTERISTICS**

The RI investigated the nature and extent of contamination on and near the Site, and defined the potential risks to human health and the environment posed by the Site. A supporting RI objective was to characterize the Site-specific geology and hydrogeology. A total of eighty-six (86) soil samples, twelve (12) groundwater samples, three (3) surface water samples, and six (6) sediment samples were collected during the RI. The main portion of the RI was conducted from April 1993 to June 1993, March 1994, June 1994 and July 1994.

#### **5.1 Meteorology**



Richland County is hot and generally humid in the summer because of moist air from the Atlantic Ocean. Winter is moderately cold but short, because cold waves from the north are impeded by the mountains to the northwest of the county. During the summer, the average daily temperature is 80° fahrenheit (F) and in the winter it is 48°F. The day-to-day weather is controlled by the movement of pressure systems across the country, although during the summer there are relatively few complete exchanges of air masses, and tropical maritime air masses persist for extended periods. During most of the year, prevailing winds in the area are generally out of the southwest. In the late summer and fall, prevailing winds are out of the northeast.

Precipitation is evenly distributed throughout the year. Average annual rainfall is approximately 47 inches, most of which falls between April and September. The average relative humidity in mid-afternoon is about 55 percent. Humidity is higher at night and the average at dawn is about 90 percent. The annual evaporation rate is 41 inches resulting in a yearly net rainfall of 5.7 inches. The two-year, 24-hour rainfall amount is 3.25 inches (USDA, 1978).

## 5.2 Geologic and Hydrogeologic Setting

### 5.2.1 Geology/Soils

The site is situated in the Piedmont Physiographic Province and the Carolina Slate Belt Geologic Province of South Carolina. The Carolina Slate Belt is part of an extensive group of metamorphosed, volcanic, and sedimentary rocks occurring along the southeast edge of the Piedmont Province from Georgia to Virginia. In the vicinity of the site, these rocks consist of meta-argillite, phyllite, volcanic tuff and volcanic flows of the Asbill Pond Formation. Most of these rocks are mantled by residual soil that is developed through in-situ weathering of fractured or jointed metamorphic rocks (Pooser and Johnson, 1961).

The site area is underlain by unconsolidated residual soil derived directly from the in-situ weathering of meta-argillite/phyllite/tuff rocks of the Carolina Slate Belt. The strike of bedding in the vicinity of the site is approximately north-south and dip is toward the west. The original sediments comprising the meta-argillite were muds and silts. Tuffaceous material and limestone are important constituents in some meta-argillite beds. The phyllite is derived from the same type of sedimentary rocks as the meta-argillite and is considered to be the higher rank metamorphic equivalent of meta-argillite. The volcanic rocks are classified as lithic tuffs and rhyolitic/andesitic flows. Basaltic dikes and aplitic intrusives are also fairly common.

### 5.2.2 Site-Specific Geology

The initial assessment of geologic conditions at the facility was conducted by SCDHEC (Knox, 1983). The assessment included the interpretation of geophysical data and the drilling of soil borings near an acid sump on the eastern side of the work shed. These data indicated that the lithology at the site was primarily weathered argillite to a depth of 60 feet. Sandy clay topsoil was also observed in the vicinity of the soil borings.

Site specific characterization of the geologic strata underlying the facility was developed during this RI with subsurface data collected from ten soil borings. The location of each boring is shown on Figure 3. Methods used to obtain soil samples from the soil borings included split-spoon sampling and rock coring. Lithologic evaluation of split-spoon and core samples was conducted with field descriptions and geotechnical tests and was limited to the upper 84 feet of materials underlying the site.

Lithologic evaluation of split-spoon samples showed soils and saprolite were composed of varying combinations of gravel, sand, silt, and clay (see Figure 4). The dominant lithologies were clay and silt, the primary constituents of argillite. However, due to the interlayered nature of these sediments, zones of silty sand, gravel, and clay can predominate locally. Sands were typically fine-grained. Soil colors included red, yellow, gray, brown, and green.

Petrologic evaluation of the core samples showed the rocks underlying the unconsolidated soil and saprolite material was primarily argillite. The argillite was generally gray-green to tan and was highly fractured and slightly contorted. Secondary mineralization along fractures was also common. Fractures typically occurred at angles greater than 45 degrees. Other rocks identified in core samples include graywacke and volcanic tuff.

The lithologies which occur at the site include a soil layer comprised of unconsolidated to semi-consolidated soils and saprolite overlying a complex of sedimentary and/or volcanic rocks.

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The soil/saprolite layer consists primarily of residual materials derived from the in-situ chemical weathering of the underlying rock. Locally within stream basins near the site, residual soil and/or rock have been chemically and mechanically weathered to form alluvial deposits. Alluvial deposits generally overlie saprolite along these surface water features.

### 5.2.3 Hydrogeology

The initial assessment of hydrogeological conditions at the site was conducted by SCDHEC. Groundwater data collected during this assessment consisted of water table measurements collected from five groundwater monitoring wells. Results of the measurements indicated the depth to groundwater was 5 to 11 feet below ground surface and the hydraulic gradient was 0.0265. Estimated water table contours constructed with these data indicated the direction of groundwater movement was southeast toward Dry Fork Creek.

Twelve groundwater monitoring wells were installed during this RI to evaluate the hydraulic characteristics of the aquifer system at the site. These were installed in clusters and each cluster was composed of one shallow, one intermediate, and one deep well. One cluster was installed at four different locations. The location of each monitoring well is shown on Figure 5.

The shallow wells were completed in the shallow water-bearing zone, the intermediate wells were completed in the intermediate water-bearing zone, and the deep wells were completed in the deep water-bearing zone. These water-bearing zones are considered to be situated within a single water table aquifer. The aquifer is comprised of a layer of saprolite overlying a unit of fractured bedrock. The saprolite contains the shallow and intermediate water-bearing zones; the deep water-bearing zone is located in the fractured bedrock.

The horizontal movement of groundwater through the aquifer system was evaluated using hydraulic conductivity values determined from slug tests in each well. The results of these in-situ hydraulic conductivity tests indicate that the average horizontal hydraulic conductivities of the soil and rock were 0.053 and 0.48 feet per day (ft/day), respectively.

The vertical movement of groundwater through the aquifer system and hydraulic head differences at well clusters were evaluated by measuring the hydraulic conductivity of samples collected in Shelby tubes and sent to a laboratory during the subsurface investigation. The results of the vertical hydraulic conductivity tests indicate that values ranged from 0.001 to 0.167 ft/day and averaged 0.004 ft/day. Comparison of the hydraulic conductivity values shows that the horizontal hydraulic conductivity value for the shallow water bearing zone exceeds the average vertical hydraulic conductivity by one order of magnitude, suggesting anisotropic conditions.

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Groundwater is present in two distinct hydrostratigraphic units at the facility. The uppermost unit consists of unconsolidated sediments including clay and silt. These sediments are underlain by a more indurated unit of argillite, a rock composed mainly of clay minerals. Water in the upper unit is transmitted through effective pore space in the unconsolidated sediments. Fractures and joints serve as transmission pathways for groundwater present in the rock unit. There are at least two water-bearing zones in the rock unit.

Based on lithological, hydrogeological, and hydraulic data collected from the site, the shallow, intermediate, and deep water bearing zones are part of the same aquifer. The aquifer includes the upper 100 feet of bedrock and the overlying sediments comprising the overburden. The upper 100 feet of bedrock was included because fractures are generally concentrated in this interval. The system is unconfined and exists under water-table conditions. Under these conditions, the water table is in equilibrium with atmospheric pressure and is not confined above by a lithologic unit of lower permeability.

The hydraulic gradient in the soil portion of the aquifer, based on the June 2, 1993 water level data, varied from 0.010 to 0.053 feet per foot (ft/ft) and averaged 0.033 ft/ft. Using an average horizontal hydraulic conductivity of 0.053 ft/day, an average hydraulic gradient of 0.033 ft/ft, and an average effective porosity of 0.2 which is typical for silty materials (Dawson and Istok, 1991), the average horizontal groundwater seepage velocity for the soil portion of the aquifer is 0.009 ft/day.

The hydraulic gradient in the rock portion of the aquifer, based on the June 2, 1993 water levels, varied from 0.037 to 0.041 ft/ft and averaged 0.039 ft/ft. Using an average horizontal hydraulic conductivity of 0.48 ft/day, an average hydraulic gradient of 0.039 ft/ft, and an average effective porosity of 0.1 which is typical for fractured rock (Dawson and Istok, 1991), the average horizontal groundwater seepage velocity for the rock portion of the aquifer is 0.187 ft/day.

In 14 years (the time since the beginning of operations at the Palmetto Recycling facility), average contaminant migration would thus be expected to be on the order of 50 feet in the soil portion of the aquifer and 1000 feet in the rock portion of the aquifer. The travel distances are based on the assumptions that contaminants move as groundwater moves and that contaminants are somehow introduced into each of these aquifer zones at the beginning of site operations. Actual contaminant movement, however, is expected to be much less due to the contaminant retardation properties of the aquifer system and the tendency for contaminants to move vertically through the unsaturated zone before entering the aquifer.

Hydraulic gradients in the shallow and deep water-bearing zones show that the general direction of groundwater movement is toward local surface waters. The actual direction of groundwater movement in the deep water-bearing zone at any given location may vary from the direction shown on the potentiometric surface maps due to the anisotropic and heterogenous nature of the fractured argillite. Groundwater movement in this unit is controlled by the geometry, orientation, and interconnection of secondary porosity features such as joints, fractures, faults, and bedding planes.

#### 5 2.4 Ecological Screening

An endangered and threatened species and critical habitat screening was conducted to identify listed species that are found in the Palmetto Recycling Site vicinity. State and federal agencies were contacted concerning information available on the wildlife and natural resources in and around the site. The U.S. Fish and Wildlife Service and the South Carolina Wildlife & Marine Resources Department provided information concerning the known state and federally listed species of concern in Richland County, South Carolina.

The South Carolina Wildlife & Marine Resources Department provided a detailed list with accompanying maps of all known species in the Richland County area. The list is based on reported sightings within the appropriate geographic area and not based on a systematic ecological survey of the entire county or of the site.

There are several federally listed endangered species whose distribution may include Richland County. Several state threatened species or species of concern may also live near the site. Two animal species whose status is undetermined, the redlip shiner (*Notropis chiliticus*) and the blacknose dace (*Rhinichthys atratulus*), are located along the surface water pathway approximately 6 stream miles from the Palmetto Recycling property. Due to the low levels of contamination identified along North Branch Crane Creek and the distance to the location of these species from the site in stream miles, it is very unlikely that these species of concern are being affected by the site contaminants.

Based on the information collected from state and federal agencies, the Palmetto Recycling Site does not pose a threat to any state or federally listed species. The site, however, may affect the habitats and migratory paths of some species because of its rural location and its close proximity to the North Branch Crane Creek, but information gathered reveals no listed species are near the site.

#### 5.3 Nature and Extent of Contamination

Environmental contamination at the Site can be summarized as follows:

Surface Soil Sampling - Surface soil samples were collected from 24 locations as part of the RI field investigation - 7 by CDM Federal and 17 by EPA (see Figure 6). Twenty-three of these samples were collected to confirm or deny impacts reported by the previous investigations. One surface soil sample was collected from an offsite location to establish background conditions for the site. All 7 samples collected by CDM Federal were sent to a Contract Laboratory Program (CLP) laboratory for full Target Analyte List (TAL) parameter analyses. In addition, 1 sample (the background sample) collected by CDM Federal was also analyzed for full Target Compound List (TCL) parameters. All 17 samples collected by EPA were sent to the EPA Environmental Services Division (ESD) laboratory for lead analysis. In addition, 9 of the 17 EPA samples were also analyzed for all other TAL parameters except cyanide, and one of the samples was also analyzed for all TCL parameters. Table 1 summarizes the rationale for the selection of surface soil sampling locations.

One contaminant of concern, lead was detected above the background concentration of 15.1 ppm in 78% of the non-background surface soil samples. Levels of the lead ranged from 6.3 ppm to 6400 ppm. One volatile organic 1,2-Dichloroethane was detected at a level of 0.0076 ppm (7 ppm is the screening level). Because 1,2-dichloro-ethane was detected at a very low concentration, volatile organics do not appear to significantly impact the surface soil at the site.

Subsurface Soil Sampling - A total of 62 subsurface soil samples were collected from 10 locations during the RI field effort (see Figure 7). Samples were collected from borings completed in and adjacent to known contaminant source areas and potential onsite source areas to refine estimated pre-RI source area boundaries. Twelve of these were obtained from a soil boring drilled in an offsite location to establish background conditions. All subsurface soil samples were sent to a CLP laboratory and analyzed for TAL parameters. In addition, approximately 25% of the samples were subjected to TCL analysis. Table 2 summarizes the rationale for the selection of soil boring sampling locations.

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TABLE 1

**RATIONALE FOR SURFACE SOIL SAMPLE LOCATIONS  
PALMETTO RECYCLING SITE  
COLUMBIA, SOUTH CAROLINA**

Sample ID	Description/Rationale
SS-01	Offsite near northwestern corner of Facility/characterize background conditions
SS-02	Drainage ditch south of site in area of probable surface flow/confirm impacts reported by previous investigation
SS-03	Drainage ditch south of site in area of probable surface flow/confirm impacts reported by previous investigation
SS-04	Drainage ditch south of site in area of probable surface flow/confirm impacts reported by previous investigation
SS-05	West of work area/previous storage or disposal area where impacts have been reported by previous investigation
SS-06	North of facility in proximity to drainage feature discharging to Dry Fork Creek/former employee reported waste dumpng in this area
SS-07	Northeastern portion of facility/previous truck trailer parking area
SS-08	East of the lagoon and waste stock pile area where processing operations formerly existed
D1	Northwestern portion of site to assess any impacts from past operations
D2	West of work area/previous storage or disposal area where impacts have been reported by previous investigation
D3	South of work area/previous storage or disposal area to assess impacts from past operations
D4	South of work area/previous storage or disposal area to assess impacts from past operations
D5	South of work area/previous storage or disposal area to assess impacts from past operations
D6	South of work area/previous storage or disposal area to assess impacts from past operations
D7	Drainage dlth south of site in area of probable surface flow/confirm impacts reported by previous investigation. Also to confirm results of SS-04.
D8	Drainage ditch south of site in area of probable surface flow/confirm impacts reported by previous investigation.

PR-01	Under asphalt of previous work area to assess impacts from past operations
PR-02	Under asphalt of previous work area to assess impacts from past operations
PR-03	Under asphalt of previous work area to assess impacts from past operations
PR-04	Under asphalt of previous work area to assess impacts from past operations
PR-05	Northeastern portion of facility/previous truck trailer parking area
PR-06	Northeastern portion of facility/previous truck trailer parking area
PR-07	West of work area/previous storage or disposal area where impacts have been reported by previous investigation
PR-08	South of work area/previous storage or disposal area to assess impacts from past operations

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TABLE 2

## RATIONALE FOR SOIL BORING SAMPLE LOCATIONS

## PALMETTO RECYCLING SITE

## COLUMBIA, SOUTH CAROLINA

Boring ID	Description/Rationale
BH-01	Near northwestern corner of property/characterize background conditions and describe geology
BH-02	Inside property boundary on east side of site/confirm or deny impacts near existing waste pile
BH-03	Outside of property boundary east of site/confirm or deny impacts downgradient to site
BH-04	Inside property boundary northeast of former office building/confirm or deny presence of impacts northeast of former office building
BH-05	Northeastern corner of facility/confirm or deny presence of impacts south of suspected dumping area
BH-06	Inside property boundary in northeastern quadrant of site/confirm or deny presence of impacts northwest of waste pile and south of suspected dumping area
BH-07	Inside property boundary in central portion of site/confirm or deny presence of impacts west of asphalt pad and former work area; north-northwest of drum storage area
BH-08	Outside property boundary due east of asphalt pad and former work area/confirm or deny presence of impacts adjacent to waste pile and lagoon area
BH-09	Inside property boundary southeast of former office building/confirm or deny presence of impacts west of asphalt pad and former work area
BH-10	Inside property boundary immediately south of asphalt pad and former work area/confirm or deny presence of impacts documented by a previous assessment

Subsurface soil analyses indicate that two volatile organics (toluene and acetone) and inorganic chemicals are present at levels above background concentrations. Because acetone is normally a laboratory contaminant and the concentration of toluene was very low, volatile organics do not appear to have significantly impacted subsurface soil at the site. Seventeen inorganics were detected above background concentrations. The most frequently detected constituents above background concentrations and those inorganics thought to be of significance are arsenic, chromium, lead, and vanadium. It appears that metals are concentrated in the southeastern portion of the site. The maximum vertical extent of inorganic constituents detected above background concentrations (lead and arsenic) was at approximately 60 feet. Chromium and vanadium were detected as deep as 35 feet. The thickest interval which showed impact was estimated from 10 to 63 feet. Vertical distribution of the metal constituents in each borehole was sporadic and did not follow any trends.

Groundwater Contamination - A total of 12 new monitor wells (4 shallow, 4 intermediate, and 4 deep) were installed as part of the field effort (see Figure 8). Groundwater samples were collected from each of the new wells and shipped to a CLP laboratory and analyzed for full TCL/TAL parameters. Table 3 summarizes the rationale for the selection of monitor well locations.

Three contaminants of concern, chloroform, arsenic, and chromium were detected above the background concentration in the groundwater. Chloroform was detected in only one sample at 6 ppb, which was below the Maximum Contaminant Level (MCL) of 100 ppb. Levels of the arsenic were detected in two samples and ranged from 19 ppb to 38 ppb, which were below the MCL of 50 ppb. Levels of chromium were detected in six samples and ranged from 3 ppb to 25 ppb, with two samples being detected above the background concentration of 5 ppb, and all samples being detected below the MCL of 100 ppb.

Surface Water and Sediment Sampling - A total of 3 surface water and 6 sediment samples were collected from onsite and offsite locations during the RI to evaluate surface water contaminant migration pathways and the extent of surface water contamination (see Figure 9). All surface water and sediment samples were sent to a CLP laboratory and analyzed for TAL parameters. In addition, 2 of the samples were subjected to TCL analysis.

There were no contaminants of potential concern identified for surface water and therefore this medium was dropped from the risk analysis. However, dieldrin was detected in the truck scale excavation pit surface water sample. The concentration measured was very low and therefore, while some potential impact is indicated by the presence of this one pesticide, it appears that contamination has not significantly impacted surface water. None of the inorganics that were detected in the truck scale excavation pit were at significant concentrations compared to Federal Ambient Water Quality Standards. Six inorganics were detected in the one stream surface water sample collected downgradient of the site. However, none of these inorganics were detected above background concentrations. Sediment analyses indicate that inorganic chemicals are present at levels above background. It appears that the constituents which were detected above background are concentrated in the portions of the stream system situated between the background location and downgradient location, suggesting that the downstream extent of impacts has been successfully estimated. Nickel and vanadium appear to be the most widespread constituents detected above background. Consequently, the contaminants have not significantly impacted the sediment at the site.

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TABLE 3

**RATIONALE FOR THE SELECTION OF MONITOR WELL LOCATIONS  
PALMETTO RECYCLING SITE  
COLUMBIA, SOUTH CAROLINA**

Well ID	Description/Rationale
MW-01S	Northwestern corner of facility/characterize background conditions.
MW-01I	
MW-01D	
MW-02S	Inside property boundary on east side of site/confirm or deny impacts in area adjacent to waste pile and lagoon.
MW-02I	
MW-02D	
MW-03S	Southeast of Main Recycling facility outside of property boundary/ confirm or deny impacts in area downgradient of Main Recycling facility.
MW-03I	
MW-03D	
MW-04S	South-southeast of Main Recycling facility outside property boundary/ confirm or deny impacts in area downgradient of Main Recycling facility.
MW-04I	
MW-04D	

MW - Monitor well  
S - Shallow  
I - Intermediate  
D - Deep

The areal extent of constituents in soil, surface water, sediment, and groundwater was estimated. Future migration patterns of constituents at land surface and in the soil and rock units of the underlying crystalline rock aquifer system were evaluated.

Ecological Screening - An endangered and threatened species and critical habitat screening was performed to identify listed species within the site area. The screening was performed by contacting local, state and federal agencies concerning wildlife and natural resources identified in Richland County. The data from these agencies were collected, reviewed and summarized as part of the field effort.

The Ecological Assessment concluded that contaminants of concern identified in the surface water and sediment of waterbodies located in the Palmetto Recycling site area show a slight potential for risk to aquatic organisms. The potential risks to terrestrial receptors are expected to be low due to the limited size and quality of the terrestrial habitat provided by the site.

## **6.0 SUMMARY OF SITE RISKS**

A Baseline Risk Assessment was conducted to evaluate the risks present at the Site to human health and the environment, under present day conditions and under assumed future use conditions.

The purpose of a Baseline Risk Assessment is to provide a basis for taking action and to identify the contaminants and the exposure media that need to be addressed by the remedial action. It serves as an indication of the potential risks posed by the Site if no action were to be taken.

This section of the ROD contains a brief summary of the results of the Baseline Risk Assessment conducted for the Site. Currently, there is no one living on the Site. However, approximately 300 persons reside within a one-mile radius of the Site. There are potable water supply wells within one mile of the Site, however, there is also municipal water available. Future land use of the area including the site will likely remain residential, with the potential for future resident use of groundwater as a potable water source.

### **6.1 Contaminants of Concern**

Data collected during the RI were evaluated in the Baseline Risk Assessment. Contaminants were not included in the Baseline Risk Assessment evaluation if any of the following criteria applied:

- If an inorganic compound or element, it was not detected at or above twice the background concentration.
- If an inorganic compound or element, it was detected at low concentrations, had very low toxicity, and was judged to be naturally occurring.
- The data included analytical results flagged as "N" (presumptive evidence) or "R" (not usable).

The results of the Baseline Risk Assessment concluded that the only media of concern was surface soil, and that the only contaminant of concern was Lead. Levels of Lead ranged from 6.3 ppm to 6400 ppm.

For the contaminant of potential concern, an exposure point concentration was determined in the Baseline Risk Assessment. The upper ninety-five percent (95%) confidence limit of the arithmetic means of all detections was used, unless it exceeded the maximum detected concentration. If this occurred then the maximum detected concentration was used. The exposure point concentration calculated in the Baseline Risk Assessment was 1,968 ppm.

### **6.2 Exposure Assessment**

The Site is located in a residential area that is expected to remain as such, though currently there is no on-site resident. Currently, there are no workers on-site. There is a possibility of trespassers gaining access to the site through broken areas of the perimeter fence. This

population could be exposed to surface soil and sediments on the site. Therefore, it was assumed that a hypothetical youth trespasser (age 7-16 years) would be potentially exposed to the media through dermal contact with and the incidental ingestion of contaminants in surficial soils and sediment. A trespasser would not be exposed to groundwater in any event. Surface water exposure was not evaluated because all contaminant levels are below background levels.

The area surrounding the site is classified as residential, so it is appropriate to assume that future on-site land use could also be residential. As a result, hypothetical future residents are assumed to be exposed to sediment, surface soil, and groundwater. the future child (1-6) and adult exposure pathways are incidental ingestion and dermal contact with surface soil and sediment, ingestion of groundwater, and no-ingestion exposure to groundwater (e.g., inhalation of volatiles from showering, washing clothes, and dishwashing).

For exposure to site groundwater by a resident, it was assumed that the resident would ingest two (2) liters per day of groundwater for 350 days a year for a thirty (30) year period. It was assumed that a child would be exposed for the same time period, but would only consume 1 liter per day of water.

For exposure to site soil by a resident, it was assumed that the adult resident would incidentally ingest one hundred (100) milligrams of soil per day for 350 days per year for a thirty (30) year period. It was assumed that the child resident would ingest two hundred (200) milligrams of soil per day for 350 days per year for a six (6) year period.

### 6.3 Toxicity Assessment of Contaminants

The purpose of the toxicity assessment is to assign toxicity values (criteria) to each chemical evaluated in the Baseline Risk Assessment. The toxicity values are used in combination with the estimated doses to which a human could be exposed (as discussed in the Risk Characterization subsection of the Baseline Risk Assessment) to evaluate the potential human health risks associated with each contaminant. Human health criteria developed by EPA (cancer slope factors and non-cancer reference doses) were preferentially obtained from the Integrated Risk Information System (IRIS, 1993) or the 1992 Health Effects Assessment Summary Tables (HEAST; EPA, 1992). In some cases the Environmental Criteria Assessment Office (ECAO, 1992) was contacted to obtain criteria for chemicals which were not listed in IRIS or HEAST.

Slope factors (SF) have been developed by EPA for estimating excess lifetime cancer risks associated with exposure to potentially carcinogenic contaminants of concern. SFs, which are expressed as risk per milligram per kilogram of dose, are multiplied by the estimated intake of a potential carcinogen, in mg/kg-day, to provide an upper-bound estimate of the excess lifetime cancer risk associated with exposure at that intake level.

The term "upper bound" reflects the conservative estimate of the risks calculated from the SF. Use of this approach makes underestimation of the actual cancer risk highly unlikely. Slope factors are derived from the results of human epidemiological studies or chronic animal bioassay data to which mathematical extrapolation from high to low dose, and from animal to human dose, has been applied, and statistics to account for uncertainty have been applied (e.g. to account for the use of animal data to predict effects on humans).

Reference doses (RfDs) have been developed by EPA for indicating the potential for adverse health effects from exposure to the chemicals of concern exhibiting noncarcinogenic effects. RfDs, which are expressed in units of mg/kg-day, are estimates of daily exposure levels for humans, including sensitive subpopulations, that are likely to be without risk of adverse effect. Estimated intakes of contaminants of concern from environmental media (e.g. the amount of a chemical of concern ingested from contaminated drinking water) can be compared to the RfD. RfDs are derived from human epidemiological studies or from animal bioassay data to which uncertainty factors have been applied (e.g., to account for the use of animal data to predict effects on humans).

Chemicals are classified regarding their carcinogenic potential according to EPA's weight-of-evidence system. This classification scheme is summarized below:

Group A: Known human carcinogen.

- Group B1: Probable human carcinogen, based on limited human epidemiological evidence.
- Group B2: Probable human carcinogen, based on inadequate human epidemiological evidence but sufficient evidence of carcinogenicity in animals.
- Group C: Possible human carcinogen, limited evidence of carcinogenicity in animals.
- Group D: Not classifiable due to insufficient data.
- Group E: Not a human carcinogen, based on adequate animal studies and/or human epidemiological evidence.

Chloroform, 1,2-Dichloroethane, Beryllium and lead are classified as B2 carcinogens. Arsenic and Chromium are classified as A carcinogens.

#### 6.4 Risk Characterization

The final step of the Baseline Risk Assessment, the generation of numerical estimates of risk, was accomplished by integrating the exposure and toxicity information.

For a carcinogen, risks are estimated as the incremental probability of an individual developing cancer over a life-time as a result of exposure to the carcinogen. Excess life-time cancer risk is calculated from the following equation:

$$\text{Risk} = \text{CDI} \times \text{CSF}$$

where:

Risk = a unitless probability (e.g.  $2 \times 10^{-5}$ ) of an individual developing cancer,

CDI = chronic daily intake averaged over seventy (70) years (mg/kg-day), and

CSF = compound and route-specific carcinogenic slope factor, expressed as (mg/kg-day)<sup>-1</sup>

These risks are probabilities that are generally expressed in scientific notation (e.g.  $1 \times 10^{-6}$ ). An excess lifetime cancer risk of  $1 \times 10^{-6}$  indicates that, as a reasonable maximum estimate, an individual has a 1 in 1,000,000 chance of developing cancer as a result of site-related exposure to a carcinogen over a seventy (70) year lifetime under the specific exposure conditions at a Site.

The potential for noncarcinogenic effects is evaluated by comparing an exposure level over a specified time period (e.g., life-time) with a reference dose derived for a similar exposure period. The ratio of the estimated exposure dose to the reference dose is called the hazard quotient (HQ). An HQ less than 1 indicates that a receptor's dose of a single contaminant is less than the RfD, and that the toxic noncarcinogenic effects from that chemical are unlikely.

By adding the HQs for all chemical(s) of concern that affect the same target organ (e.g. liver) within a medium or across all media to which a given population may reasonably be exposed, the Hazard Index (HI) is generated. An HI less than 1 indicates that, based on the sum of all HQs from different contaminants and exposure routes, toxic noncarcinogenic effects from all contaminants are unlikely.

The HQ is calculated as follows:

$$\text{Non-cancer HQ} = \text{CDI/RfD}$$

where:

CDI = Chronic Daily Intake (average over the exposure period) (mg/kg-day)

RfD = reference dose (mg/kg-day); and

CDI and RfD are expressed in the same units and represent the same period (i.e., chronic, subchronic, or short-term).

Carcinogenic risk and noncarcinogenic Hazard Index (HI) ratios were calculated for both the current land use scenario, with residents near the Site, and the anticipated future land use scenario, which is residential use. The Baseline Risk Assessment determined that the total cancer risk (using Reasonable Maximum Exposure) for the current residential scenario exceeded an individual risk of  $1\text{E-}6$  in sediment. The cancer risk estimates associated with exposure to sediment are  $3\text{E-}6$  for arsenic and  $2\text{E-}6$  for beryllium. This risk level is within the EPA acceptable risk range ( $1\text{E-}4$  to  $1\text{E-}6$ ). However, EPA may decide that a baseline risk level less than  $1\text{E-}4$  (i.e. a risk between  $1\text{E-}4$  and  $1\text{E-}6$ ) is unacceptable to site specific conditions and that remedial action is warranted. However, for the site, EPA believes that remediation of sediment would not be required for protection of human health. The total Hazard Index for the current resident is 0.02. This hazard index is well below any level of concern for noncarcinogens (1.0) and indicates the Site does not pose an unacceptable non-carcinogenic risk under the current exposure scenario evaluated in the Baseline Risk Assessment. Therefore there is no unacceptable current non-carcinogenic risk at the Palmetto Recycling Site.

The Baseline Risk Assessment also determined that the total cancer risk for the future Site residential scenario was  $6\text{E-}4$ . The contributing exposure pathways were groundwater ingestion and inhalation ( $6\text{E-}4$ ), surface soil dust inhalation ( $3\text{E-}6$ ), and surface soil ingestion ( $2\text{E-}5$ ) and dermal contact ( $2\text{E-}6$ ). The contaminants arsenic and chloroform exceeded a risk of  $1\text{E-}6$  in groundwater. The cancer risk estimates associated with exposure to groundwater ingestion and inhalation totals are  $5\text{E-}4$  for arsenic and  $3\text{E-}5$  for chloroform. However, the contaminants arsenic and chloroform in the groundwater at the site were below federal and/or state MCL's. Therefore, it has been determined that groundwater does not warrant remediation. The cancer risk estimates associated with exposure to surface soil dust inhalation, surface soil ingestion, and dermal contact totals are  $6\text{E-}6$  for arsenic and  $2\text{E-}5$  for beryllium. This risk level is within the EPA acceptable risk range ( $1\text{E-}4$  to  $1\text{E-}6$ ). However, EPA may decide that a baseline risk level less than  $1\text{E-}4$  (i.e. a risk between  $1\text{E-}4$  and  $1\text{E-}6$ ) is unacceptable to site specific conditions and that remedial action is warranted. However, for the site, EPA believes that remediation of surface soil for the contaminants arsenic and beryllium, would not be required for protection of human health. Lead is being considered separately because it does not have toxicity values. The Hazard Index for the future Site residential scenario was 2.0 for a child and 5.0 for an adult exposed to groundwater; both of these levels exceed the acceptable hazard index of 1.0. However, the contaminants arsenic and chloroform in the groundwater at the site were below federal and/or state MCL's. Therefore, it has been determined that groundwater does not warrant remediation. The non-carcinogenic risk is attributable to the ingestion of the arsenic and chromium present in the groundwater. The Hazard Index for the future Site residential scenario was 0.1 for a child and 0.01 for an adult exposed to surface soils; both of these Hazard Indices are below EPA's level of concern (HI of 1.0) for noncarcinogenic toxicity.

In addition, Lead was also identified as a contaminant of concern. Currently there is not an EPA slope factor or reference dose for lead. EPA believes that the available studies in animals do not provide sufficient quantitative information for their calculation (ATSDR, 1990). Although lead is currently classified as a B2 carcinogen, the EPA considers the noncarcinogenic neurotoxic effects in children to be the critical toxic effect in terms of health based environmental cleanup. The neurotoxic effects of chronic low-level lead exposure in children may occur at blood levels as low as 10 ug/dl.

In the absence of lead health criteria, two approaches were considered. The first was to predict mean lead blood levels in children using the Lead Uptake/Biokinetic Model (version

0.99d, U.S. EPA 1994). The second approach compares on-site mean level concentration with applicable or relevant and appropriate requirements (ARARs).

The results of the model predicted that 10.61% of the exposed population would have a blood lead concentration above the cutoff of 10 ug/dl. EPA generally requires further action if greater than 5% of the exposed population is predicted to have blood lead levels higher than the cutoff point.

Mean concentrations were calculated for the groundwater and soil media and were compared to the relevant applicable or relevant and appropriate requirements (ARARs). The groundwater concentration of 10 ppb, calculated as the mean concentration, was approximately 33 percent lower than the current action level of 15 ppb published by the Office of Drinking Water of EPA. Therefore, it has been determined that groundwater does not warrant remediation. The mean lead concentration of the soil at the site was 528 ppm which is 32 percent greater than the current screening level of 400 ppm as per OSWER Directive 9355.4-12. The level of 400 ppm is design to protect children from developing lead blood levels above 10 ug/dl. As a result of the Baseline Risk Assessment, EPA has determined that remediation of surface soil would be required for the protection of human health and the environment. Thus, since the screening level of 400 ppm is designed to protect children from developing lead blood levels above 10 ug/dl, EPA has selected the level of 400 ppm for lead as the remediation goal for surface soil.

No substantial risk to wildlife or the environment was found to exist under present or future conditions.

The Baseline Risk Assessment concluded that the subsurface soils, the surface water, and the sediments at the Site are not media of concern. During the FS, it was determined that the groundwater was not a media of concern. The Baseline Risk Assessment determined that the surface soil was the only media posing an unacceptable level of risk to human health or the environment. The actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Record of Decision, may present an imminent and substantial endangerment to public health or the environment.

## **7.0 DESCRIPTION OF SOIL REMEDIAL ALTERNATIVES**

The FS would normally consider a wide variety of general response actions and technologies for remediating surface soil at the Site. However, due to the very focused scope of the FS and the small extent of contamination, the screening of potential remedial actions was limited. Several previous remedial actions have been performed at the Palmetto Recycling Site to remove contaminated sludge, soil, and wastewater. This FS focused on remediating the remaining "hot spots" of contamination.

Based on the FS, Baseline Risk Assessment, and Applicable or Relevant and Appropriate Requirements (ARARs), the remedial action objectives (RAOs) listed below were established for the Site. Alternatives were developed with the goal of attaining these objectives:

- Prevent ingestion, inhalation, or dermal contact with surface soil that contains lead concentrations in excess of the remediation level;
- Control migration of lead from soil to groundwater;
- Prevent ingestion or inhalation of soil particulates in the air having lead concentrations in excess of the remediation level;
- Control migration of lead from surface soil to a surface water body (via surface water runoff) that would result in contamination to levels greater than the Ambient Water Quality Criteria of 3.2 µg/l for lead;
- Control future releases of contaminants to ensure protection of human health and the environment; and
- Permanently and significantly reduce the mobility, toxicity, or volume (M/T/V) of characteristic hazardous waste with treatment.

The results of the RI showed that the surface soil is contaminated with lead above the remediation level of 400 mg/kg (see Table 4). The soil contamination extends over an estimated area of approximately 29,500 square feet. The estimated depth of contamination is one foot. Therefore, the estimated volume of surface soil contamination is approximately 1,100 cubic yards (see Figure 10).

Since the volume of contamination is small, the only general response actions that were considered are no action, institutional actions, and removal followed by offsite treatment (if required) and disposal (at a treatment, storage, and disposal Facility). Onsite treatment such as solidification/stabilization was not evaluated in this FS because the estimated quantity of contaminated soil at this site falls short of the typical cut-off mark used within the industry to size whether a project is more cost-effectively treated onsite versus offsite (2000 tons  $\pm$  15%).

The most appropriate technologies applicable to the contamination found at the Palmetto Recycling Site were chosen for each of the general response actions. Specific process options were then selected to represent those technologies. Remedial action alternatives were formulated considering the extent of surface soil contamination, contaminant type, contaminant concentrations, and applicable technologies. The alternatives assessed for this site are presented in Table 5. These alternatives were evaluated on the basis of overall protection of human health and the environment, long-term effectiveness, compliance with ARARs, reduction of mobility, toxicity, or volume through treatment, short-term effectiveness, implementability, and cost.

Three alternatives were developed. These actions include: no further action at the site beyond monitoring the surface soil and groundwater (Alternative 1); implementing deed restrictions and fencing to control public access to the soils (Alternative 2); and removing the last potential source(s) of surface soil contamination and disposing of the soils at a properly permitted offsite facility (Alternative 3).

Each of the three (3) alternatives is discussed below. Alternatives 1 and 2 will not meet the remediation goal presented in Section 9.1.3 of this ROD. Alternative 3 will meet the remediation goal. Alternative 3 represents the highest level of protectiveness and the maximum reduction of contaminant mobility and toxicity. Alternative 2, Limited Action, is not expected to achieve a reduction in surface soil contaminant toxicity or volume, but will eliminate some exposure pathways through access restrictions.

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**TABLE 4**  
**REMEDIAL ACTION OBJECTIVE FOR SURFACE SOIL**  
**PALMETTO RECYCLING SITE**  
**COLUMBIA, SOUTH CAROLINA**

Chemical of Concern	Remediation Level (mg/kg)	Basis
Lead	400	OSWER Directive 9355.4-12

\*This level was selected for this Site based on the OSWER Directive 9355.4-12

**TABLE 5**  
**DEVELOPMENT OF REMEDIAL ACTION ALTERNATIVES FOR SURFACE SOIL**  
**PALMETTO RECYCLING SITE**  
**COLUMBIA, SOUTH CAROLINA**

Alternative	Description of Process Options Employed
1	No Action Long-term soil and groundwater monitoring for 30 years
2	Limited Action: Deed restrictions Fencing Long-term soil and groundwater monitoring for 30 years
3	Excavation Offsite Disposal at either: a) Subtitle D landfill (if TCLP proves nonhazardous) b) Subtitle C treatment and disposal facility (if TCLP proves hazardous)  Short-term groundwater monitoring for 5 years

Alternative 1, No Action, is the least protective alternative, in that it would not meet ARARs or eliminate exposure pathways.

"O&M costs" refer to the costs of operating and maintaining the treatment described in the alternative, for an assumed period of 30 years. O&M costs were calculated using a seven percent (7%) discount rate per year.

Alternatives 1 (No Action) and 2 (Limited Action) include long-term soil and groundwater monitoring at the Site for a period of 30 years. Alternative 3 (Excavation and Offsite Disposal) includes verification soil sampling to insure that all soil contaminated at concentrations exceeding the remediation goal is removed for treatment or disposal. Additionally, all alternatives except Alternative 3 include six Five Year Reviews to be conducted during the assumed 30-year O&M period.

Alternatives 1 and 2 would not comply with the Resource Conservation and Recovery Act (RCRA) landfill closure requirements, in 40 CFR Part 264 and in the South Carolina Hazardous Waste Management Regulations (SCHWMR), Reg. 61-79.264, which require removal of contamination "to the maximum extent possible." Alternative 3 would, assuming successful implementation, comply with the following major applicable ARARs. Alternative 3 involves materials handling and potential generation of particulates, and thus, must comply with the South Carolina Ambient Air Quality Standards (AAQS) which implement the South Carolina Pollution Control Act, and the National Emission Standards for Hazardous Air Pollutants (NESHAP) under the Clean Air Act. Alternative 3 could include landfill disposal of hazardous wastes and, therefore, could be required to comply with RCRA land disposal restrictions (LDRS, 40 CFR Part 268, SCHWMR 61-79.268) if the soils are shown to be hazardous wastes subject to land disposal requirements (40 CFR Part 261,



SCHWNR-61-79.261). Finally, U.S. Department of Transportation (DOT), EPA (40 CFR Part 262), and SCDHEC (SCHWNR 61-79.262) regulations governing the transportation of hazardous materials would also apply to alternatives 3 if the soils prove to be hazardous waste.

#### 7.1 Alternative 1: No Action

CERCLA requires that EPA consider a "No Action" alternative to serve as a basis against which other alternatives can be compared. Under this alternative, no action would be taken to remedy the contaminated surface soil at the site and to reduce (M/T/V) waste. Because contaminants would be left on-site under this alternative, the No Action Alternative would involve the continued monitoring of the soil and groundwater quality at the site. Groundwater monitoring would be accomplished utilizing existing monitor wells. These wells would be sampled for lead on a quarterly basis for the first five years and annually for a remainder of twenty-five years. Soil monitoring would consist of surface soil sampling for the same parameter and frequency. Public health evaluations would be conducted every five years and would allow EPA to assess the ongoing risks to human health and the environment posed by the site. The evaluations would be based on the data collected from soil and groundwater monitoring.

Capital Cost:	\$ 0.00
Annual O&M Cost:	\$ 68,000.00
Total Present Worth Cost:	\$612,000.00

\*The estimated annual O&M cost is approximately \$68,000 during the first 5 years and \$17,400 thereafter.

#### 7.2 ALTERNATIVE 2 - LIMITED ACTION

This alternative is identical to the No Action Alternative (Alternative 1) described above except that it includes implementation of institutional measures to control, limit, and monitor activities onsite. The objectives of institutional actions are to prevent prolonged exposure to contaminant concentrations, control future development or excavation at the site, and prevent the installation of water supply wells within the boundaries of the site. These objectives are accomplished by monitoring soil and groundwater at the site and limiting use and access by placing fences and deed restrictions on all properties within potentially contaminated areas. The effectiveness of institutional actions depends on their continued implementation.

Soil and groundwater monitoring can be used to evaluate the effectiveness of any remedial action in controlling releases from the site. Fences and deed restrictions are designed to prevent access/exposure to soil by limiting what can be done at the site. Restrictions would be placed on the site to limit its future use. This could be accomplished by recording in the property deeds that potentially hazardous surface soil is located on the property and that use restrictions have been imposed. If implemented correctly, they provide low-cost moderate protection against direct contact with contaminants. Deed restrictions and fences are potential mechanisms to limit and monitor activity on the property, and ensure that all contact with potentially contaminated surface soil is regulated and monitored.

Capital Cost:	\$ 53,000.00
Annual O&M Cost:	\$ 68,000.00
Total Present Worth Cost:	\$668,000.00

\*The estimated annual O&M cost is approximately \$68,000 during the first 5 years and \$17,400 thereafter.

#### 7.3 ALTERNATIVE 3 - EXCAVATION AND OFFSITE DISPOSAL

Alternative 3 includes excavation of surface soil that exceeds the remediation level and disposal in either a RCRA landfill or a solid waste landfill. Conventional excavation will be used to remove the top one foot of soil. The soil will be Toxicity Characteristic Leaching Procedure (TCLP) tested. If the soil exceeds the Land Disposal Restrictions (currently 5 ppm for lead), then the soil will be transported to a RCRA Subtitle C disposal facility. Prior to disposal, the facility will pretreat the soils using a stabilizer/solidifier such as a cement or pozzolan based agent. If the soil does not exceed the 5 ppm restriction, it can be

transported to a Subtitle D solid waste landfill and disposed of directly without pretreatment. The excavated area would be backfilled with clean topsoil.

Groundwater monitoring on an annual basis, for at least five years, would be required to evaluate site progress.

If soils can go to a RCRA subtitle D (nonhazardous facility)

Capital Cost:	\$158,000.00
Annual O&M Cost:	\$ 13,000.00
Total Present Worth Cost	\$237,000.00

\*The estimated annual O&M cost is approximately \$13,000 for 5 years.

If soils must go to a RCRA subtitle C (hazardous facility)

Capital Cost:	\$857,000.00
Annual O&M Cost:	\$ 13,000.00
Total Present Worth Cost:	\$936,000.00

\*The estimated annual O&M cost is approximately \$13,000 for 5 years.

## **8.0 SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVE**

### **Overall Protection of Human Health and the Environment**

The three (3) alternatives for surface soil remediation were evaluated based upon the nine (9) criteria set forth in 40 C.F.R. § 300.430(e) (9) of the NCP. In the sections which follow, brief summaries of how the alternatives were judged against these nine (9) criteria are presented. In addition, the sections are prefaced by brief descriptions of the criteria.

#### **8.1 Surface Soil Remediation Alternatives**

For ease of reference, the three (3) surface soil remedial alternatives that EPA considered are listed in Table 2.

##### **8.1.1 Threshold Criteria**

Two (2) threshold criteria must be achieved by a remedial alternative before it can be selected.

1. Overall protection of human health and the environment addresses whether the alternative will adequately protect human health and the environment from the risks posed by the Site. Included is an assessment of how and whether the risks will be properly eliminated, reduced, or controlled through treatment, engineering controls, and/or institutional controls.

Regarding surface soil concerns, Alternatives 1 and 2 do not eliminate exposure pathways and reduce the level of risk. However, Alternative 2 minimally reduces the level of human risk by way of deed restrictions and fencing. Alternative 1 and Alternative 2 do not limit migration of or remove existing surface soil contamination. Alternative 3 eliminates exposure pathways and greatly reduces the level of risk. In addition, Alternative 3 removes contamination and eliminates further migration.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) addresses whether an alternative will meet all of the requirements of Federal and State environmental laws and regulations, as well as other laws, and/or justifies a waiver from an ARAR. The specific ARARs which will govern the selected remedy are listed and described in Section 9.0, the Selected Remedy.

The evaluation of the ability of the proposed alternatives to comply with ARARs included a discussion of chemical-specific, action-specific and location-specific ARARs presented in Section 7.

Alternatives 1 and 2 will not meet chemical-specific ARAR's for surface soil. Under Alternative

3, ARAR's will be met through excavation and offsite disposal at a properly designed facility.

#### 8.1.2 Primary Balancing Criteria

Five (5) criteria were used to weigh the strengths and weaknesses of the alternatives, and were used to select one of the Three (3) alternatives. Assuming satisfaction of the threshold criteria, these five (5) criteria are EPA's main considerations in selecting an alternative as the remedy.

1. Long term effectiveness and permanence refers to the ability of the alternative to maintain reliable protection of human health and the environment over time, once the remediation goals have been met. The continued exposure of onsite receptors to surface soils is a potential long-term impact for Alternatives 1 and 2. Because contaminated soil remains onsite under these two alternatives. The remediation level derived for protection of human health and the environment would not be met by Alternatives 1 and 2. Under Alternative 3, removal of the soils will eliminate exposure pathways. The residual risk is low because the surface soil that exceeds the remediation level will be disposed of offsite. Landfill disposal has been proven to be an effective solution for containment of contaminated material over the long-term.

2. Reduction of toxicity, mobility, or volume through treatment addresses the anticipated performance of the treatment technologies that an alternative may employ. The 1986 amendments to CERCLA, the Superfund Amendments and Reauthorization Act (SARA), directs that, when possible, EPA should choose a treatment process that permanently reduces the level of toxicity of Site contaminants, eliminates or reduces their migration away from the Site, and/or reduces their volume on a Site.

Alternatives 1 & 2 do not achieve a reduction in the toxicity, mobility, or volume of the contaminants since these alternatives are considered complete at this time. Alternative 3 will reduce the mobility of contaminants, but the toxicity and volume will remain the same.

3. Short-term effectiveness refers to the potential for adverse effects to human health or the environment posed by implementation of the remedy.

During the implementation of all the alternatives, both onsite workers and people surrounding the site will be protected when sampling the various media during review/reassessment every 5 years, when installing a fence around the site and from possible impacts caused by excavation activities. Risks from soil excavation and removal would be addressed in health and safety plans. There is no risk to the environmental receptors from implementation of any remedy, although, habitats could be disrupted during excavation activities.

4. Implementability considers the technical and administrative feasibility of an alternative, including the availability of materials and services necessary for implementation.

All components of each alternative are both technically and administratively feasible. Alternative 1 and 2 can be implemented immediately because fencing and monitoring equipment are readily available. For Alternative 2 in administrative terms, implementing this alternative may have its difficulties. Access restrictions are subject to changes in political jurisdictions, legal interpretations, and regulatory enforcement. As properties change hands, it is imperative that owners are informed of the deed restrictions and abide by them. Alternative 3 can be implemented. Excavation and landfill disposal are proven technologies. There is an identifiable RCRA Subtitle C facility that can properly treat and dispose of the soils. Access to Subtitle D facilities is also available. Excavation of the surface soil requires only conventional equipment.

5. Cost includes both the capital (investment) costs to implement an alternative, plus the long-term O&M expenditures applied over a projected period of operation. The total present worth cost for each of the four alternatives is presented in Table 3, and in Section 7.

#### 8.1.3 Modifying Criteria

State acceptance and community acceptance are two (2) additional criteria that are considered in selecting a remedy, once public comment has been received on the Proposed Plan.

1. State acceptance: The State of South Carolina concurs with this remedy. South Carolina's letter of concurrence is provided in Appendix B to this ROD.

2. Community acceptance was indicated by verbal comments received at the Palmetto Recycling Site Proposed Plan public meeting, held on December 6, 1994. The public comment period opened on November 22, 1994, and closed on January 23, 1995 (after a 30-day extension). Written comments received concerning the Site, and those comments expressed at the public meeting, are addressed in the Responsiveness Summary attached in Appendix A to this ROD.

## **9.0 THE SELECTED REMEDY**

Based upon consideration of the requirements of CERCLA, the NCP, the detailed analysis of the three (3) alternatives and public and state comments, EPA has selected a remedy that addresses surface soil contamination at this Site. At the completion of this remedy, the risk remaining at this Site will be considered protective of human health and the environment.

The selected remedy for the Site is:

Alternative 3, Excavation and Offsite Disposal

Total present worth cost of the selected remedy is:

If soils can go to a RCRA subtitle D (nonhazardous facility)

Total Present Worth Cost: \$237,000.00

If soils must go to a RCRA subtitle C (hazardous facility)

Total Present Worth Cost: \$936,000.00

This remedy consists of excavation of surface soil and offsite disposal in either a RCRA landfill or a solid waste landfill. The following subsections describe this remedy in detail, provide the criteria (ARARS and TBC material) which shall apply, and establish the performance standards for implementation.

### **9.1 Surface Soil Contamination**

This remedy component consists of excavation of contaminated soil, verification sampling, and transport of the soil to either a permitted RCRA Subtitle C disposal facility or a Subtitle D solid waste landfill. The following subsections describe this remedy in detail, provide the criteria (ARARS and TBC material) which shall apply, and establish the performance standards for implementation.

For purposes of describing this portion of the remedy and specifying the requirements which shall apply to it, it is assumed that some or all of the contaminated soils to be addressed will be shown by laboratory analysis to be RCRA hazardous wastes. However, TCLP tests could prove otherwise.

#### **9.1.1 Description**

On-Site work shall be performed in accordance with the OSHA health and safety standards applicable to remedial activities. Proper materials handling procedures shall be used during the excavation and handling of soil. Such measures may include the use of water to minimize dust emissions during soil excavation, transport, and handling, and the use of tarps or plastic sheeting placed over temporary soil stockpiles to minimize dust emissions and runoff.

Soil in the area of soil contamination shall be excavated until the remaining soil achieves the concentrations established as performance standards as described in Section 9.1.3 of this ROD.

Prior to excavation, soil sampling sufficient to confirm the areal extent of soil which exceeds these criteria, shall be conducted at all three compass boundaries of the area shown in Figure 10 of this ROD. Verification sampling shall be employed to ensure that all soils contaminated at levels exceeding the performance standard are removed.

After excavation, the soil will be Toxicity Characteristic Leaching Procedure (TCLP) tested. If the soil exceeds the Land Disposal Restrictions (currently 5 ppm for lead), then the soil will be transported to a RCRA Subtitle C disposal facility. Prior to disposal, the facility will pretreat the soils using a stabilizer/solidifier such as a cement or pozzolan based agent. If the soil does not exceed the 5 ppm restriction, it can be transported to a Subtitle D solid waste landfill and disposed of directly without pretreatment.

Transport shall be accomplished in compliance with DOT regulations governing transportation of hazardous materials.

Excavation work shall be staged and coordinated with backfill/grading/seeding activities to minimize dust production and surface water runoff. The on-Site excavation shall be backfilled with clean soil, properly recompact, and the land surface regraded to the preexisting natural slope. A vegetative cover will be established to minimize undue surface water runoff and minimize erosion.

Groundwater monitoring on an annual basis, for at least five years, would be required to evaluate site progress.

This alternative represents the best balance among the criteria used to evaluate remedies. Alternative 3 is believed to be protective of human health and the environment, would attain ARARs, would be cost effective, and would utilize permanent solutions and alternative treatment technologies or resource technologies to the maximum extent practicable.

#### 9.1.2 Applicable or Relevant and Appropriate Requirements (ARARs)

ARARs originate from applicable requirements intended to definitely and specifically apply to a remedial action; or relevant and appropriate requirements, which, while not intended to apply to the specific situation in question, EPA judges to be applicable to a remedial action. In addition, when establishing criteria for ensuring the proper implementation of a remedial action, EPA may develop requirements from other guidance documents or criteria, sources often referred to as "To Be Considered" material (TBCs).

**Applicable Requirements.** Soil remediation shall comply with all applicable portions of the following Federal and State of South Carolina regulations listed in Tables 6-9 and below:

49 CFR Parts 107, 171-179, promulgated under the authority of the Hazardous Materials Transportation Act. Regulates the labeling, packaging, placarding, and transport of hazardous materials offsite.

40 CFR Parts 261, 262 (Subparts A-D), 263, and 268, promulgated under the authority of the Resource Conservation and Recovery Act., These regulations govern the identification, transportation, manifestation, and land disposal restriction requirements of hazardous wastes. If the contaminated soils fail TCLP, most likely, the land disposal restrictions in 40 CFR Part 268 will apply. However, if EP toxicity tests are performed and the contaminated soils do not exceed EP toxicity limits, then the land disposal restrictions in 40 CFR Part 268 will not apply, even though the contaminated soils fail TCLP. In the event that the Site soils requiring remediation do not test hazardous (i.e., do not fail TCLP), the regulations listed here will be considered relevant and appropriate rather than applicable.

SCHWMMR 61-79.124, .261, .262, .263 and .268, South Carolina Hazardous Waste Management Regulations, promulgated pursuant to the Hazardous Waste Management Act, SC Code of Laws-, 1976, as amended, establishes criteria for identifying and handling hazardous wastes, as well as land disposal restrictions regulations will also become relevant and appropriate in the remediation do not prove to be event that the soils requiring hazardous, as described in the above paragraph.

**Relevant and Appropriate Requirements.** The following regulations are "relevant and appropriate" to source control actions (soil remediation) at the Palmetto Recycling Site. Applicability of these air quality control regulations is due to the potential for release of harmful particulates (metals) during soil excavation and handling activities.

40 CFR Parts 60 and 61, promulgated under the authority of the Clean Air Act. Included are the

National Emissions Standards for Hazardous Air Pollutants (NESHAPs). Ambient air quality standards for emissions to the atmosphere fall under these regulations.

SC Reg. 61-62, South Carolina Air Pollution Control Regulations and Standards, promulgated pursuant to the S.C. Pollution Control Act, SC Code of Laws, 1976, as amended. Establishes limits for emissions of hazardous air pollutants and particulate matter, and establishes acceptable ambient air quality standards within South Carolina.

"To Be Considered" and Other Guidance.

Revised Procedures for Planning and Implementing Off-site Response Actions, OSWER Directive 9834.11, November 1987. This directive, often referred to as "the off-site policy," requires EPA personnel to take certain measures before CERCLA wastes are sent to any facility for treatment, storage, or disposal. EPA personnel must verify that the facility to be used is operating in compliance with § 3004 and § 3005 of RCRA, as well as all other federal and state regulations and requirements. Also, the permit under which the facility operates must be checked to ensure that it authorizes (1) the acceptance of the type of wastes to be sent, and (2) the type of treatment to be performed on the wastes.

40 CFR Part 50, promulgated under the authority of the Clean Air Act. This regulation includes the National Ambient Air Quality Standards (NAAQS), and establishes a national baseline of ambient air quality levels. The state regulation which implements this regulation, South Carolina Reg. 62-61, is applicable to the source control portion of the remedy.

Various TBC materials were utilized in the Baseline Risk Assessment and in the Feasibility Study. Because cleanup standards were established based on these documents, they are considered TBC.

In the Baseline Risk Assessment, TBC material included information concerning toxicity of, and exposure to, Site contaminants. TBC material included the Integrated Risk Information System (IRIS), Health Effects Assessment Summary Tables (HEAST), and other EPA guidance as specified in the Baseline Risk Assessment.

In the FS, soil concentrations protective of human health and the environment were calculated based on the Site-specific risk calculations from the Baseline Risk Assessment, using TBC information as described above. These levels are established as performance standards in the following section. There are no established federal or state standards for acceptable levels of Palmetto Recycling Site contaminants in surface or subsurface soils.

The protective level for surface soils (0-1 feet) was established for lead (Pb) which is equivalent to the EPA Region IV Level of Concern 400 mg/kg for surface soils (0-1 feet). This criterion is also designated TBC.

Other requirements. Remedial design often includes the discovery and use of unforeseeable, but necessary, requirements, which result from the planning and investigation inherent in the design process itself. Therefore, during design of the source control component of the selected remedy, EPA may, through a formal ROD modification process such as an Explanation of Significant Differences or a ROD Amendment, elect to designate further ARARs which apply, or are relevant and appropriate, to this portion of the remedy.

#### 9.1.3 Performance Standards

The standards outlined in this section comprise the performance standard defining successful implementation of the remedy. The soil remediation goal is 400 ppm for Lead for all areas across the site. Excavation. The soil remediation goal (Table 4) is established as a performance standard. The performance standard shall control the excavation procedure described above. Additionally, all on-Site excavation work shall comply with 29 CFR 1910.120, the OSHA health and safety requirements applicable to remedial activities.

Transport of contaminated soil. Transportation shall be accomplished in compliance with the Hazardous Materials Transportation Act (49 CFR 107, 171-179).

Disposal of contaminated soil. Disposal of contaminated Site soil shall comply with the

applicable, or relevant and appropriate, RCRA regulations (40 CFR Parts 261, 262 (Subparts A-D), 263, and 268). The determination of applicability, versus relevant and appropriate, is described in Section 9.1.2, under "applicable requirements," where the above regulations are cited. In any circumstance, the disposal of contaminated soils shall be done at a RCRA Subtitle C treatment, storage, and disposal facility.

Confirmation soil sampling will be conducted to insure that all contaminated soil has been excavated.

## **10. STATUTORY DETERMINATIONS**

The selected remedy for this Site meets the statutory requirements set forth at Section 121(b) (1) of CERCLA, 42 U.S.C. § 9621(b) (1). This section states that the remedy must protect human health and the environment; meet ARARs (unless waived); be cost-effective; use permanent solutions, and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and finally, wherever feasible, employ treatment to reduce the toxicity, mobility or volume of the contaminants. The following sections discuss how the remedy fulfills these requirements.

Protection of human health and the environment: The surface soil remediation alternative will include excavation of surface soil that exceeds the remediation level of 400 ppm for Lead and disposal in either a RCRA Landfill or a solid waste landfill, thereby reducing and eventually removing the future risks to human health which could result from ingestion of the surface soil.

Compliance with ARARs: The selected remedy will meet ARARs, which are listed in Sections 9.1.2 of this ROD.

Cost effectiveness: Among the surface soil alternatives that are protective of human health and the environment and comply with all ARARs, the selected alternative is the most cost-effective choice because it uses a treatment technology to remediate the contamination in basically the shortest time frame, at a cost similar to the other alternatives.

Utilization of permanent solutions, and alternative treatment technologies or resource recovery technologies to the maximum extent practicable: The selected remedy represents the use of treatment for a permanent solution. Among the alternatives that are protective of human health and the environment and comply with all ARARs, EPA and the State of South Carolina have determined that the selected remedy achieves the best balance of trade-offs in terms of long-term effectiveness and permanence, reduction of toxicity/mobility/volume, short-term effectiveness, implementability, and cost. The selected soil remedial action is the most practical and easily implemented alternative, given the relatively small volume of soil requiring remediation (approximately 1100 cubic yards).

Preference for treatment as a principal remedy element: The soil remedial action will not satisfy the preference, because it was determined that treatment of the small volume of soil requiring remediation is not practical. Additionally, offsite disposal is more feasible in that it does not result in creation of an onsite waste cell that must be monitored for an extended period of time. If the contaminated soils are treated prior to disposal at a RCRA facility, then the preference will be satisfied.

## **11. DOCUMENTATION OF SIGNIFICANT CHANGES**

EPA issued a Proposed Plan (preferred alternative) for remediation of the Palmetto Recycling Site on November 22, 1994. The selected combination of remedies does not differ from the Proposed Plan. However, it was determined that an adjustment needed to be made in the cost estimates that were in the proposed plan.

The cost estimates, as documented in the proposed plan, for the present worth of each alternative were calculated using a five percent (5%) discount rate per year. However, pursuant to the OSWER Directive 9355.3-20 (Revisions to OMB Circular A-94 on Guidelines and Discount Rates for Benefit-Cost Analysis), the cost estimates, as documented in this ROD, for the present worth of each alternative were calculated using a seven percent (7%) discount rate per year.

TABLE 6

POTENTIAL CHEMICAL-SPECIFIC ARARs  
PALMETTO RECYCLING SITE  
COLUMBIA, SOUTH CAROLINA

Source	Requirement	Status	Rationale
Water			
Inorganic chemicals in drinking water: 40 CFR 141.11 40 CFR 141.62 40 CFR 141.50-51 SC Reg. 61-58.5 B	The maximum contaminant levels (MCLs) for inorganic chemicals are the maximum permissible levels of a contaminant in water (mg/l) which is delivered to a free flowing outlet to the ultimate user of a public water system.	Relevant and Appropriate	These requirements are not applicable since a public water system (as defined in 40 CFR 141) is not involved. They are relevant and appropriate to protect groundwater, a potential drinking water source, from contaminants found on the site. These contaminants might migrate or leach into the underlying aquifer as a consequence of various alternative actions. Maximum contaminant level goals (MCLGs) are to be used when special circumstances, such as where multiple contaminants in groundwater or multiple pathways of exposure present extra-ordinary risks, require a more stringent level than the MCL. MCLGs for which the standard is zero are not considered ARARs or TBCs.
Organic chemicals in drinking water: 40 CFR 141.61 SC Reg. 61-58.5	The MCLs for organic chemicals are the maximum permissible levels of a contaminant in water (mg/l) which is delivered to a free flowing outlet to the ultimate user of a public water system.	Relevant and Appropriate (proposed MCLs are TBC)	These requirements are not applicable since a public water system (as defined in 40 CFR 141) is not involved. They are relevant and appropriate to protect groundwater, a potential drinking water source, from contaminants found on the site. These contaminants might migrate or leach into the underlying aquifer as a consequence of various alternative actions. SC has not promulgated MCLs for organic chemicals in drinking water that are more stringent than the federal standards.
Ambient Water Quality Standards: SC Res. 61-68	Dry Fork Creek is classified as a fresh water stream to be protected for aquatic organisms. Instream concentration limits for heavy metals are established by SCDHEC using EPA's Gold Book of quality criteria for water and a formula.	Applicable	These standards for the contaminants of concern which may be carried by storm water runoff into Dry Fork Creek are applicable.



TABLE 6 (continued)

POTENTIAL CHEMICAL-SPECIFIC ARARS  
PALMETTO RECYCLING SITE  
COLUMBIA, SOUTH CAROLINA

Source	Requirement	Status	Rationale
Chemicals in drinking water (solid waste disposal facility): 40 CFR 257.3-4 SC Reg. 61-79.264.94	A facility shall not contaminate an underground water source beyond the solid waste boundary (outermost perimeter of the waste). The concentration of chemicals shall not exceed background levels or listed MCLs, whichever is higher.	Applicable	Onesite residuals of solid waste (contaminated surface soil) might cause migration into the underlying aquifer and potentially contaminate drinking water systems as a consequence of remedial actions.
Air			
Ambient Air Quality Standards: SC Reg. 62.5 Standard No. 2	The ambient air standard for lead as determined by Federal Reference Methods is 1.5 mg/m3 (calendar quarterly mean).	Applicable	During remedial activities at the site, lead in fugitive dust may be released. The ambient air standard is applicable statewide.
Control of Fugitive Particulate Matter Statewide: SC Reg. 62.6 Section III	Emissions of fugitive dust shall be controlled in such a manner and to the degree that it does not create an undesirable level of air pollution.	Applicable	During remedial activities at the site, fugitive dust may be released.
Soil			
OSWER Directive 9355.4-12: Revised Imterim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities	The remediation level for lead in surface soil is 400 mg/kg.	To Be Considered	Lead levels for surface soll are not established in promulgated regulations. Therefore, this guidance will be utilized. This requirement is designed to protect children from developing blood lead levels above 10 ug/dl from exposure to surface soil.

TABLE 7

POTENTIAL LOCATION-SPECIFIC ARARs  
PALMETTO RECYCLING SITE  
COLUMBIA, SOUTH CAROLINA

Source	Requirement	Status	Rationale
Fish and Wildlife Conservation Act 16 USC Section 2901 et seq.	Requires states to identify significant habitats and develop conservation plans for these areas.	Relevant and Appropriate	Confirmation with the responsible state agency regarding the site being located in one of these significant habitats is required.
Endangered Species Act of 1973 16 USC Section 1531 et seq.	Requires action to conserve endangered species or threatened species, including consultation with the Department of Interior.	Relevant and Appropriate	Although threatened or endangered species or critical habitats have not been identified at the site, there are endangered plants and animals listed for the county and state that could potentially be affected by contamination at the site.
Wetlands Management Executive Order Executive Order 11990; Protection of Wetlands	Requires action to minimize the destruction, loss, or degradation of wetlands.	Relevant and Appropriate	Wetland areas are present within the vicinity of the site.

TABLE 8

POTENTIAL ACTION-SPECIFIC ARARs  
PALMETTO RECYCLING SITE  
COLUMBIA, SOUTH CAROLINA

Source	Requirement	Status	Rationale
Discharge of storm water runoff: 40 CFR 122.26	Storm water from landfills, construction sites, and industrial activities must be monitored and controlled.	Applicable	Required of all industrial waste sites and construction sites of greater than 5 acres that discharge storm water runoff to the waters of the United States.
Discharge of treatment under system effluent: System 40 CFR 125.104	Best Management Practices (BMP)	Relevant	The requirement is not applicable because BMP
		and	the National Pollutant Discharge Elimination
	Develop and implement a BMP program to prevent the release of toxic or hazardous pollutants to the waters of the U.S. The BMP program must:	Appropriate	(NPDES) permit program applies only to ancillary facilities of manufacturing units that might have releases of toxic or hazardous pollutants. This substantive permit requirement is relevant and appropriate to the prevention of releases from
spills	! Establish specific procedures for the control of toxic and hazardous pollutant spills and runoff		or runoff during the implementation of remedial actions.
	! Include a prediction of direction, rate of flow, and total quantity of toxic and hazardous pollutants where experience indicated a reasonable potential for equipment failure		
Generators who transport hazardous waste for offsite storage, TSD: 40 CFR 262.20-.23	Any generator who transports hazardous waste for offsite TSD must originate and follow-up the manifest for offsite shipments.	Applicable	Any waste determined to be RCRA hazardous waste removed from this site for offsite treatment,  or disposal would be subject to the manifest requirements.

TABLE 8 (continued)

POTENTIAL ACTION-SPECIFIC ARARs  
PALMETTO RECYCLING SITE  
COLUMBIA, SOUTH CAROLINA

Source	Requirement	Status	Rationale
Closure of hazardous materials waste TSD facility: media. 40 CFR 264 Subpart G	Operator must close the facility in a manner that:  ! Minimizes the need for further maintenance ! Minimizes post-closure escape of hazardous constituents ! Complies with specific unit type closure requirements  All contaminated equipment, structures, and soils must be properly disposed of or decontaminated.	Applicable	The site is a TSD facility in that hazardous are present as contaminants of environmental Remediation may involve treatment or storage of hazardous wastes.
Land disposal restrictions (LDRs): the 40 CFR 268, Subpart D disposal	Generally prohibits the placement of restricted RCRA hazardous wastes in land-based units such as landfills, surface impoundments, waste piles and facilities, unless one or more of the following are met:  ! Wastes have been treated in accordance with technology-based or concentration-based standards specified in Subpart D ! The site manager can demonstrate that another technology can achieve an equivalent measure of performance in accordance with 40 CFR 268.42 ! The site manager has demonstrated that the waste does not meet any of the criteria under which the waste was listed and other factors (including additional constituents that might not cause the waste to be hazardous.	Applicable	The contaminated surface soil at this site is restricted RCRA wastes that would be subject to LDRs for lead. Remediation may involve land of restricted hazardous wastes.

TABLE 9

OTHER REQUIREMENTS<sup>a</sup>  
PALMETTO RECYCLING SITE  
COLUMBIA, SOUTH CAROLINA

Source	Requirement	Status	Rationale
OSHA worker protection requirements: 29 CFR 1940 and 1910	These regulations establish requirements to protect work crews who might be exposed to radiation, noise, or hazardous waste at the remediation site.	Applicable	This site is a remediatlon site under CERCLA. Compliance with 29 CFR 1910.120 is required for all sites undergoing remediation by 40 CFR 300.150.
DOT Requirements for transportation of hazardous materials: 49 CFR 171-173, 177, 178	No one may transport hazardous material on public highways except in accordance with these regulations:	Applicable	These requirements are applicable to all remedial actions which will transport hazardous materials offsite.
	Part 171            General requirements		
	Part 172            This part establishes shipping papers marking, labeling, placarding, and emergency response information requirements		
	Part 173            This part establishes packaging and other shipping requirements for hazardous materials		
	Part 177            Requirements of the transporter		
	Part 178            Specifications for the shipping containers		
Waste Acceptance Criteria	Establishes the waste that can be treated or disposed of at the receiving facility.	Applicable	Wastes can only be shipped from the site to a permitted treatment or disposal facility according to CERCLA Section 121(d) (3). All permitted facilities have acceptance criteria.

<sup>a</sup> Others requirements are not technically ARARs or TBCs since they are not environmental regulations or guidance subject to waiver, but must be complied with whenever applicable without deviation.

## REFERENCES

- CDM Federal Programs Corporation, November 1994. Remedial Investigation and Feasibility Study Report, Palmetto Recycling Site, Columbia, South Carolina
- Knox, Raymond C., June 1983. Geohydrologic Assessment, Palmetto Recycling, Inc., Richland County, South Carolina.
- Pooser, W.K. and H.S. Johnson, 1961. Geology of the Fort Jackson North Quadrangle, South Carolina. Division of Geology, South Carolina State Development Board.
- Tanner, T., 1992. Verbal Communication with Terry Tanner, Remedial Project Manager for EPA, site meeting on July 19, 1992.
- U.S. Department of Agriculture, 1978. Soil Survey of Richland County, South Carolina.
- U.S. Environmental Protection Agency, 1992. Statement of Work for the Palmetto Recycling Site
- U.S. Geological Survey Topographic Quadrangle Maps of South Carolina. Columbia North 1972, PR 1990; Irmo 1971, PR 1990; Blythewood 1971, PR 1990; Fort Jackson 1972, PR 1990. Scale 1:24,000.
- Weston, October 1994. Final Baseline Risk Assessment, Palmetto Recycling Site, Columbia, South Carolina.

## **APPENDIX A**

### **RESPONSIVENESS SUMMARY**

#### **FOR THE PALMETTO RECYCLING SUPERFUND SITE**

##### **1. Overview**

The U.S. Environmental Protection Agency (EPA) held a public comment period from November 22, 1994 to December 22, 1994, for interested parties to comment on the Remedial Investigation/Feasibility Study (RI/FS) results and the Proposed Plan for the Palmetto Recycling Superfund Site in Columbia, South Carolina. Upon receipt of a request, the comment period was extended an additional 30 days. The comment period closed on January 23, 1995.

EPA held a public meeting at 7:00 p.m. on December 6, 1994, at the Fairlawn Community Center in Columbia, South Carolina to present the results of the RI/FS and the Baseline Risk Assessment, to present the Proposed Plan and to receive comments from the public.

EPA proposed excavation and offsite disposal to address contaminated soil. Judging from the comments received during the public comment period, the residents and local officials in the Columbia, South Carolina area support the cleanup alternative proposed by EPA.

The Responsiveness Summary provides a summary of citizens' comments and concerns identified and received during the public comment period, and EPA's response to those comments and concerns. These sections and attachments follow:

- Background of Community Involvement
- Summary of Comments Received During the Public Comment Period and EPA's Responses
- Attachment A: Proposed Plan for the Palmetto Recycling Superfund Site
- Attachment B: Public Notices of Public Comment Period & Extension of Public Comment Period
- Attachment C: Written Public Comments Received During the Public Comment Period
- Attachment D: Official Transcript of the Proposed Plan Public Meeting

##### **2. Background of Community Involvement**

EPA's community relations program for the Site began on June 8, 1992, when EPA conducted community interviews in order to develop a community relations plan for the Site. At that time, residents living adjacent to the Site were concerned about the Site and about any health risks from the Site. In addition, residents did voice some concerns about lack of information to the public during the removal work at the Site and lack of response to earlier complaints about the Site.

Throughout EPA's involvement, the community has been kept aware and informed of Site activities and findings. Discussions have taken place during visits to the area by the Remedial Project Manager (RPM) and the Community Relations Coordinator (CRC). Local officials were briefed during the community interviews. The Site mailing list was expanded to include additional residents living in close proximity to the Site.

##### **3. Summary of Comments Received During the Public Comment Period and Agency Responses**

The Public Comment Period was opened on November 22, 1994 and was to end on December 22, 1994. Upon request, a 30-day extension was granted, which extended the comment period to January 23, 1995. Public Notices which were published in local papers can be found in Attachment B.

On December 6, 1994, EPA held a public meeting to present the Proposed Plan to the community and to receive comments thereupon. All comments received at this public meeting and during the public comment period are summarized below. Part I of this section addresses those community

concerns and comments that are non-technical in nature. Responses to specific legal and technical questions are provided in Part II.

#### Summary and Response to Local Community Concerns

The following issues and concerns were expressed at the Proposed Plan Public Meeting, and during the public comment period.

COMMENT: An attendee asked a question regarding whether or not a Private Well Survey was conducted.

RESPONSE: EPA conducted a private well survey of 52 homes and residences during the Remedial Investigation. The Private Well Water Use survey revealed that at least 36 private wells are located within one mile of the site. Of these, 21 wells are currently used for drinking water. The remainder are used for household purposes, irrigation, or are not being used at all.

COMMENT: An attendee asked a question regarding whether or not testing was done under the asphalt pad.

RESPONSE: During the Remedial Investigation, EPA collected four surface soil samples located under the asphalt pad. These samples were collected under the asphalt of previous work areas to assess the impacts from past operations.

COMMENT: An attendee claimed during the proposed plan meeting that the Palmetto Recycling, Inc., owned approximately 20 acres of land including the site area. She was concerned that additional contamination could be present on the other 181/2 acres of the property.

RESPONSE: Previous studies suggested that there were numerous sources of contamination at the Site. Based on those studies, several previous remedial actions have been performed to remove the contaminated sludge, soil, and wastewater from the site. While those levels of contamination were greatly reduced, a Remedial Investigation was warranted to fully delineate all contamination of known areas and to characterize the site. Based on the information obtained from the operational history of the facility and the earlier investigations, including the Remedial Investigation, EPA has characterized the site and the nature of its contaminants to the best of its knowledge. However, if further information suggest additional sources of contamination, EPA will do its best to investigate the area and confirm the information.

COMMENT: An attendee asked a question regarding what was considered onsite or offsite for the purposes of looking at risk at the site.

RESPONSE: EPA stated during the public meeting that when we say living on site we mean that if someone built a house on the site and a child lived in that house and was in the yard every day coming and going under normal conditions, including drinking the water from the well on site and all of the other exposure pathways, then, that person or family would experience a higher level of exposure than a child who lives across the street or nearby. Onsite simply means that someone can or will be exposed on a day to day basis, not occasionally.

COMMENT: An attendee inquired about the likelihood of someone getting cancer from the contaminants of concern at the site and whether or not someone would have to be exposed for a period of ten years or so before they would get cancer.

RESPONSE: EPA stated during the public meeting that there is no clear evidence that lead is a carcinogen (a cancer causing agent). However, lead has very serious effects in other ways such as with the central nervous system. Therefore you would not expect to see cancer as a result of lead exposure. The only other contaminant mentioned in the Risk Assessment that had any significant levels and might be a carcinogen is 1,2-Dichloroethane. However, it was found at such low levels that the risk associated with that is infinitesimally small.

COMMENT: An attendee inquired about how long the clean up of the site would take and whether or not there would be any exposure from the dust during the clean-up activities.

RESPONSE: First there are several enforcement issues that by law EPA would have to pursue to see if there are any viable parties out there. At that time, EPA will negotiate with the



responsible parties to conduct the clean-up activities at the site. If agreements can't be reached then, EPA will conduct the clean-up activities. Because there are so many unknown factors involved, an exact time can not be determined.

Second, EPA will take several measures to ensure that proper handling procedures will be used during the excavation and handling of soil. Such measures may include the use of water to minimize dust emissions during the soil excavation, transport, and handling, and use of tarps or plastic sheeting placed over temporary soil stockpiles to minimize dust emissions and runoff. These measures should greatly reduce the level of exposure.

## Part II - Technical Response to Public Comments

Many questions were raised during the Public Comment period regarding how the Palmetto Recycling Superfund Site Remedial Investigation and Feasibility Study were conducted (i.e., the selection of sampling locations for background samples, soil boring samples and monitoring wells; the selection of the cleanup goal and the selection of the preferred alternative for remedial action). In addition, there was a suggestion for onsite treatment using Fixation/stabilization and disposal. The written comments concerning the previously mention questions are located in Attachment C of this Responsiveness Summary.

Responses addressing the following topics: selection of sampling locations for background samples, soil boring samples and monitoring wells

Before the activities necessary to conduct a Remedial Investigation and Feasibility Study can be planned, it is very important for EPA to compile the available data that have previously been collected for a Site. EPA's analysis of existing data serves to provide a better understanding of the nature and extent of contamination and aids in the design of several remedial investigation tasks (ie., identifying boundaries of the study area, determining the locations of background samples, soil (surface/subsurface) samples, sediment samples, groundwater samples and surface water sediments).

In the case of the Palmetto Recycling Site, several studies suggested that there were numerous sources of contamination at the Site. Based on those studies, several previous remedial actions have been performed to remove the contaminated sludge, soil, and wastewater from the site. While those levels of contamination were greatly reduced, a Remedial Investigation was warranted to fully delineate all contamination of known areas and to characterize the site. Based on the information obtained from the operational history of the facility and the earlier investigations, several sampling locations, including background locations were selected during the initial Remedial Investigation fieldwork. Based on the analysis of the data obtained during phase 1 of the RI, additional surface soil samples were warranted in order to evaluate the extent of surface soil contamination. For surface and subsurface soil locations, one location for each of these background samples was collected. Additional background soil samples could have been obtained, but with results ranging from (6.4 mg/kg - 6400 mg/kg) for the lead contaminant, it is very unlikely that an additional background sample would have had a lead result equal to or greater than 3400 mg/kg). Levels in the 6400 mg/kg range are not naturally occurring in the boundaries of this Site. Based on information from previous investigations, including Phase I of the Remedial Investigation, an additional monitoring well cluster was not installed north of well cluster #3 to monitor groundwater downgradient of the suspected dumping area. Previous data does not support occurring groundwater contamination from this area. Therefore, installation of an additional well cluster was not warranted.

Responses addressing the following topics: Approaches used to determine the cleanup goal for lead at the Palmetto Recycling Superfund Site.

Currently there is not an EPA slope factor or reference dose for lead. EPA believes that the available studies in animals do not provide sufficient quantitative information for their calculation (ATSDR, 1990). Although lead is currently classified as a B2 carcinogen, the EPA considers the noncarcinogenic neurotoxic effects in children to be the critical toxic effect in terms of health based environmental cleanup. The neurotoxic effects of chronic low-level lead exposure in children may occur at blood levels as low as 10 ug/dl.

In the absence of lead health criteria, two approaches were considered. The first was to predict mean lead blood levels in children using the Lead Uptake/Biokinetic Model (version

0.99d, U.S. EPA 1994) pursuant to the guidance OSWER Directive 9355.14-2.

The second approach compares on-site mean level concentration with applicable or relevant and appropriate requirements (ARARs).

Pursuant to the guidance OSWER Directive 9355.14-2 the on-site mean level concentration for lead (528 mg/kg) was used as an input to the model as opposed to the 95% UCL concentration of (1,968 mg/kg).

The results of the model predicted that 10.61% of the population would have an unacceptable blood lead concentration. EPA generally requires further action if greater than 5% of the population has acceptable blood levels.

Consequently, it was suggested that the Lead Uptake/Biokinetic Model be run iteratively until the acceptable blood lead levels and population effects are reached (10 ug/dl and 5%, respectively). If the current Lead Uptake/Biokinetic Model is run with 400 mg/kg as the input for soil concentrations, the value approaches EPA's acceptable criterion which is less than or equal to 5% of the population exceeding the blood lead level concentration of 10 ug/dl. Based on this evaluation, a lead level concentration of 400 mg/kg was chosen as a cleanup goal to be used during remedial action at the Palmetto Recycling Site.

Responses addressing the following topics: the selection of the preferred alternative for remedial action (Excavation and offsite disposal) verses onsite treatment using Fixation/stabilization and disposal.

Although many remedial actions have been performed at the Palmetto Recycling Site to remove contaminated sludge, soil and wastewater, the results of the RI showed that several "hot spots" still exist. The FS focused on remediating those remaining "hot spots" to a lead remediation level of 400 mg/kg. Using a worst case scenario, the estimated area of soil contamination extends over an area of approximately 29,500 square feet. A depth of one foot was used to calculate the estimated volume of surface soil contamination. Based on the calculations, surface soil contamination is approximately 1,100 cubic yards. Please note that this estimate is very conservative. Sampling during the remedial design is warranted to completely delineate the lateral extent of contamination and more accurately determine the volume of contaminated surface soil.

Since the volume of contamination is small, the only General Response Actions (GRAs) that will be considered are no action, institutional actions, and removal followed by offsite disposal and subsequent treatment at a treatment, storage, and disposal (TSD) facility. Onsite treatment such as solidification/stabilization was not evaluated in this FS because the estimated quantity of contaminated soil at this site falls short of the typical cut-off mark used within the industry to size whether a project is more cost-effectively treated onsite versus offsite (2000 tons  $\pm$  15% is the cutoff mark used).

The soil remedial action will not satisfy the preference, because it was determined that treatment of the small volume of soil requiring remediation is not practical. Additionally, offsite disposal is more feasible in that it does not result in creation of an onsite waste cell that must be monitored for an extended period of time. If the contaminated soils are treated prior to disposal at a RCRA facility, then the preference will be satisfied.

Proposed Plan for the Palmetto Recycling Superfund Site  
<IMG SRC 0495223K>

SUPERFUND PROPOSED PLAN FACT SHEET  
Palmetto Recycling Superfund Site  
Columbia, Richland County, South Carolina

U.S. Environmental Protection Agency, Region IV, Atlanta, GA

November 1994

This fact sheet is one in a series designed to inform residents and local officials of the ongoing cleanup efforts at the Site. A number of terms specific to the Superfund process (printed in bold print) are defined in the glossary which begins on Page 16

INTRODUCTION

The United States Environmental Protection Agency (EPA), is proposing a cleanup plan, referred to as the preferred alternative, to address contaminated soil at the Palmetto Recycling Superfund Site (the Site) located in Columbia, Richland County, South Carolina. This document is being issued by EPA, the lead agency for Site activities, and the South Carolina Department of Health and Environmental Control (SCDHEC), the support agency.

This Proposed Plan summarizes the cleanup methods/technologies evaluated in the Feasibility Study (FS). In accordance with Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986, (CERCLA, known as Superfund), EPA is publishing this Proposed Plan to provide an opportunity for public review and comment on all cleanup options (known as remedial alternatives) under consideration for the Site, as developed in the Feasibility Study, including EPA's preferred alternative. EPA is initiating a thirty (30) day public comment period from November 22 to December 22, to receive comments on this Proposed Plan and the RI/FS Reports. EPA, in consultation with SCDHEC, will select a remedy for the Site only after the public comment period has ended and all infomation submitted to EPA during that time has been reviewed and considered. As outlined in section 117(a) of CERCLA, EPA encourages public participation by publishing Proposed Plans for addressing contamination at Superfund sites, and by providing an opportunity for the public to comment on the proposed remedial actions. Changes to the preferred alternative, or a change from the preferred alternative to another, may be made if public comments or additional data indicate that such a change would result in a more appropriate solution. The Final decision regarding the selected remedy will be

documented in a Record of Decision (ROD) after EPA has taken into consideration all comments from the public. Upon timely request, EPA will extend the public comment period by 30 additional days.

EPA's preferred alternative for cleanup of Site surface soil is: Excavation and Offsite Disposal. This alternative achieves the best balance of trade-offs among the criteria EPA uses to evaluate remedial alternatives. The selection of a cleanup plan, or "preferred alternative," represents a preliminary decision by EPA, subject to a public comment period. The preferred alternative for surface soil, as well as the others considered, are summarized in this fact sheet and presented more fully in the Feasibility Study (FS).

SCOPE OF THE PROPOSED ACTION. This Proposed Plan for the Palmetto Recycling Superfund site addresses remedies for surface soil contamination present at the site. Groundwater, sediments and surface water were sampled during the Remedial Investigation as well. The planned action is necessary to protect the public and environmental receptors from exposures to contaminated surface soils. Additional sources or operable units are not expected.

Public Comment Period:  
Tuesday, November 22, 1994  
-Thursday, December 22 1994

Public Meeting  
Date: Tuesday, December 6, 1994  
Time: 7:00 P.M.  
Place: Fairlawn Community Center  
9128 Wilson Boulevard  
Columbia, SC

Provide written comments or call:  
Yvonne Jones or Cynthia Peurifoy  
US Environmental Protection Agency  
North Superfund Remedial Branch  
345 Courtland St, NE  
Atlanta, Georgia 30365  
1-800-435-9233

This fact sheet summarizes information that is explained in greater detail in the Remedial investigation (RI)/Feasibility Reports (FS) Reports dated November 1994, and the Baseline Risk Assessment document dated November 1994. These documents and all other records utilized by EPA to make the proposal specified in this document are contained in the administrative record for this Site. EPA and SCDHEC encourage the public to review this information, especially during the public comment period, to better understand the Site, the Superfund process, and the intent of this Proposed Plan. The administrative record is available for public review during normal working hours, locally at the site information repository, which is the Northeast Regional Library or in the Record Center at EPA, Region IV's office in Atlanta, Georgia (see page 15).

THIS PROPOSED PLAN:

- 1. Includes a brief history of the Site, the principle findings of the RI and a summary of the Baseline Risk Assessment;
- 2. Presents the cleanup alternatives considered by EPA for the Site;
- 3. Outlines the criteria used by EPA to recommend an alternative for use at the Site;
- 4. Provides a summary of the analysis of alternatives;
- 5. Presents EPA's rationale for its preliminary selection of the preferred alternative; and
- 6. Explains the opportunities for the public to comment on the remedial alternatives, and hence the cleanup of the Palmetto Recycling Superfund Site.

SITE BACKGROUND

Site Description. The Site is located about 8 miles north of Columbia, South Carolina, in rural Richland County. The site is positioned between U.S. Highway 321 and U.S. Highway 21 on the north side of Koon Store Road - State

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Road S-40-61 (Figure 1). The Site occupies approximately 1.5 acres and is bounded by Koon Store Road to the south, an unnamed dirt road (and farther removed, Dry Fork Creek) to the east, an unnamed tributary of Dry Fork Creek to the north, and a residential lot and home to the west. Figure 2 shows the location of the Site.

Land use in the area is rural residential, with much of the surrounding area comprised of scrub vegetation and pines. According to the Hazard Ranking System (HRS) evaluation, conducted in 1986, EPA estimates 5,300 people live in a 3-mile radius of the site. Approximately 46 residences are located along Koon Store Road within 1 mile of the site.

Important physical features of the site include a 6-ft x 30-ft concrete walkway, an office building, a 135-ft by 170-ft asphalt pad with two concrete pads, a frame work shed, a concrete tank saddle, and an unnamed tributary that flows to Dry Fork Creek. A previously, open excavation which was filled with water associated with abandoned truck scales was sampled during the RI field effort and found to be uncontaminated. The water was pumped to the unnamed tributary and the pit was backfilled with clean soil and graded to prevent ponding. A sparse cover of crushed rock was applied for soil erosion control. The waste materials in the suspected dumping areas have been removed. In addition, five groundwater monitor wells, installed by Raymond Knox Consultants, are located onsite. Dry Fork Creek, located east of the site, flows toward the south into the North Branch of Crane Creek. Dry Fork Creek receives drainage from an unnamed tributary located north of the site.

Site History. The property was purchased in 1979 by Palmetto Recycling, Inc. for the purpose of operating a battery recycling company. From 1979 to 1983, the facility was involved in the reclamation of lead from batteries. In the process, the facility operations produced acid waste which collected in a sump. The reclamation process also produced wastewater from the washing of battery cases. Specific neutralization process details are unknown, but at some point, the facility discharged wastewater of unknown composition to the local sewer system.

After discharging wastewater for an unknown period of time, Palmetto Recycling attempted to obtain a discharge permit. In 1981, the South Carolina Department of Health and Environmental Control (SCDHEC) denied applications

by Palmetto Recycling, Inc. to operate a hazardous waste facility and to transport hazardous wastes. After this attempt, some waste liquids were sent offsite to an acid recycler and some were disposed of onsite. It is not known if these wastes were neutralized before shipment or onsite disposal. The quantities are also unknown. Plastic battery cases and lead plates were eventually sold to other companies as reusable materials (EPA, 1992).

A study conducted by the SCDHEC identified elevated concentrations of lead and iron in the groundwater samples collected next to the sump. High levels of lead, barium, and chromium were in found in sediment from the unnamed stream that runs north of the site. The investigation also revealed the presence of elevated concentrations of lead in on-site soils. SCDHEC noted the presence of a five-foot deep, unlined acid pit containing 1,800 gallons of acid waste at the site, as well as 100 drums of caustic waste and unstablized pile battery casings.

On February 11, 1983, Palmetto Recycling filed for bankruptcy and Ryan Hovis was appointed trustee. In 1984, workers removing equipment from the site destroyed a section of the roof covering the on-site collection sump that collected wastewater containing lead oxide and sulfuric acid from the wash process. As a result of this incident, sump water percolated through soils adjacent to the pit area. To address immediate health and environmental risks posed by the Site, three removal actions have occurred at the site. On April 25, 1994, 10,800 gallons of contaminated water were collected by the Bryson Industries Services and taken to Alternate Energy Resources. On April 1984, SCDHEC informed the bankruptcy trustee that additional measures would be necessary to bring the site under control. Later in 1984, the contractors removed approximately 100 drums containing liquid caustic waste. On October 2, 1985, SCDHEC authorized Future Fuel Development, Inc., to remove site soils contaminated with lead and chromium. A total of 365 tons of soils were removed from various areas on-site and placed in off-site landfills during 1985 and 1986.

In 1986, EPA conducted a preliminary assessment of the site. Based on the results of the assessment, EPA proposed the site for inclusion on the National Priorities List (NPL) in June 1988. The NPL identifies the most serious abandoned or uncontrolled hazardous waste sites that warrant further investigation to determine if they pose a threat to human health and/or the environment. Sites included on the NPL are eligible for clean-up funds under

the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, more commonly known as "Superfund") of 1980 as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986. The Palmetto Recycling site was formally added to the NPL on October 4, 1989.

In 1992, EPA negotiated with parties it had identified as Potentially Responsible Parties (PRPs) for the site to conduct the RI/FS. An agreement was not reached between EPA and the parties. Therefore, EPA conducted RI Field activities at the Site from April 1993 through June 1993 and March 30, 1994 through July 25, 1994.

The RI field activities were as follows:

- ! Conducted a land survey to establish the topographic variations across the site.
- ! Installed twelve (4 shallow, 4 intermediate, and 4 deep) monitoring wells;
- ! Collected groundwater samples from the monitoring wells;
- ! Collected surface soil samples from 24 locations that included one background surface soil sample;
- ! Collected 62 subsurface soil samples from 10 locations that included twelve background subsurface soil samples;
- ! Collected 3 surface water and 6 sediment samples from onsite and offsite locations;
- ! Surveyed monitoring wells and sampling locations;
- ! Conducted Private Well/Water Use Survey within a one-mile radius of the site. Each available resident was surveyed to determine the type of water supply and the uses of the water;
- ! Performed water level measurements in the 12 monitoring wells to determine the groundwater flow direction. Two staff gauge measurements were used to determine the water level of Dry Fork Creek.

! Performed an Ecological screening to identify endangered and threatened species within the site area. The screening was performed by contacting local, state and federal agencies concerning the wildlife and natural resources in Richland County. The data from these agencies were collected, reviewed and summarized as part of the field effort.

RESULTS OF THE REMEDIAL INVESTIGATION

The RI investigated the nature and extent of contamination on and near the Site, and defined the potential risks to human health and the environment posed by the Site. A total of eighty-six (86) soil, twelve (12) groundwater, three (3) surface water, and six (6) sediment samples were collected (see Figures 3,4,5 and 6). More detailed information can be found in the RI and FS reports, and in the Baseline Risk Assessment.

Soil Contamination. One contaminant of concern, lead was detected above the background concentration of 15.1 ppm in 78% of the non-background surface soil samples. Levels of the lead ranged from 6.3 ppm to 6400 ppm. Lead concentrations, detected at all of the sampling locations exceeded the health risk-based concentration of 400 ppm, in six of the surface soil samples. A level of 400 ppm and below is designed to protect children from developing blood lead levels above 10 ug/dl. All of the other inorganics detected above baseline were detected very near the baseline concentration and do not appear to have significantly impacted the surface soil at the site. One volatile organic 1,2-dichloroethane was detected at a level of 0.0076 ppm (7 ppm is the screening level). Because 1,2-dichloroethane was detected at a very low concentration, volatile organics do not appear to significantly impact the surface soil at the site.

Groundwater Contamination. Three contaminants of concern, chloroform, arsenic, and chromium were detected above the background concentration. Chloroform was detected in only one sample at 6 ppb, which was below the Maximum Contaminant Level (MCL) of 100 ppb. Although, the MCL for chloroform was not exceeded, the chloroform level of 6 ppb did exceed the health risk-based concentration that was derived in the Baseline Risk Assessment in one sample. Levels of the arsenic were detected in two samples and ranged from 19 ppb to 38 ppb, which were below the MCL of 50 ppb. Although, the MCL

for arsenic was not exceeded, the arsenic level of 38 ppb did exceed the health risk-based concentration that was derived in the Baseline Risk Assessment in one sample. Levels of chromium were detected in six samples and ranged from 3 ppb to 25 ppb, with two samples being detected above the background concentration of 5 ppb, and all samples being detected below the MCL of 100 ppb. Although, the MCL for chromium was not exceeded, and only two samples were detected above the background concentration, the chromium levels did exceed the health risk-based concentration that was derived in the Baseline Risk Assessment. Based on the results of the Baseline Risk Assessment, remedial goal options were identified for chloroform, arsenic and chromium. However, concentrations of these chemicals of concern in the groundwater at the site were well below the Federal Drinking Water Standards of 100 ppb, 50 ppb and 100 ppb, respectively. In addition, due to the low frequency of detection for each of the contaminants, there is no evidence of a groundwater plume at the site. Consequently, the contaminants have not significantly impacted the groundwater at the site.

Surface Water Contamination. There were no contaminants of concern identified for surface water and therefore this medium was dropped from the risk analysis. However, dieldrin was detected in the truck scale excavation pit surface water sample. The concentration measured was very low and therefore, while some potential impact is indicated by the presence of this one pesticide, it appears that contamination has not significantly impacted surface water. None of the inorganics that were detected in the truck scale excavation pit were at significant concentrations compared to Federal Drinking Water Quality Standards. Six inorganics were detected in the one stream surface water sample collected downgradient of the site. However, none of these inorganics were detected above background concentrations.

Sediment Contamination. Sediment analyses indicate that inorganic chemicals are present at levels above background. It appears that the constituents which were detected above background are concentrated in the portions of the stream system situated between the background location and downgradient location, suggesting that the downstream extent of impacts has been successfully estimated. Nickel and vanadium appear to be the most widespread constituents detected above background. Consequently, the contaminants have not significantly impacted the sediment at the site.

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CERCLA directs EPA to protect human health and the environment from current and potential future exposure to hazardous substances at the site. A risk assessment was conducted to evaluate the potential current and future risks associated with exposure to the site contaminants.

Human Risk

An evaluation was made of all potential exposure routes which could connect contaminants of concern (COC's) at the Site with people living or working in the area. Exposure by each of these pathways was mathematically modeled using generally conservative assumptions.

The Baseline Risk Assessment (BRA) for the Site was prepared by Roy F. Weston, Inc. for EPA Region IV. The BRA was finalized in November, 1994. EPA determined as a result of the risk assessment that potential future exposure to lead in surface soils was of concern and stated that remediation of surface soil would be required for the protection of human health and the environment. It should be noted that the risk levels incorporated both site-related and background-risks, since some contaminants existed in the study area naturally.

EPA determined as a result of the risk assessment that potential future residential exposures to chloroform, arsenic, and chromium in groundwater were of some concern. However, due to the low frequency of detection for each of the contaminants, and the fact that the concentrations of these contaminants are well below the Federal Drinking Water Quality Standards, groundwater remediation will not be required for the protection of human health. Based on the current use scenario, the Baseline Risk Assessment concluded that non-cancer effects are not expected for the trespasser exposed to sediment at the site. Cancer risk estimates for the current use scenario associated with exposure to sediment are 3E-6 for arsenic and 2E-6 for beryllium. The quantifiable carcinogenic risk due to exposure to sediment in this scenario are within EPA's target range. There are no cancer and non-cancer effects associated with exposure to sediment under the future resident scenario. EPA has determined that risks to human health from contaminants in the sediment (arsenic and beryllium) are within EPA's acceptable risk range and stated that remediation of sediment would not be required for the protection of human health. Subsurface soils and surface water were not identified in the risk assessment as

media of concern for the Site. Therefore, subsurface soils and surface water remediation will not be required for the protection of human health.

Actual or threatened releases of the contaminant from the site, if not addressed by one of the alternatives in this plan, may present an imminent and substantial endangerment to public health, welfare or the environment

Environmental Risk

A qualitative risk assessment was conducted to determine if contaminants present at the site have impacted plant life or animals in the area. In summary, contaminants of concern identified in the surface water and sediment of waterbodies located in the Palmetto Recycling site area show a slight potential for risk to aquatic organisms. The potential risks to terrestrial receptors are expected to be low due to the limited size and quality of the terrestrial habitat provided by the site.

SUMMARY OF ALTERNATIVES

Based on the results of the RI/FS reports and the risk assessment, cleanup levels were developed that would be protective of human health and the environment. These cleanup levels will form the basis of any remedial activity. Various alternatives were evaluated in the FS report using these cleanup levels as goals for site cleanup. Surface soil is the only medium of concern and the only contaminant of concern is lead. The soil/source cleanup levels were established to minimize site risks and insure future protection of groundwater. The current cleanup level for lead is 400 ppm.

The FS report evaluated a variety of cleanup methods that could be used at this site. As required by CERCLA, a no further action alternative was evaluated to serve as a basis for comparison with the other active cleanup methods. The cleanup methods to address site related contamination which exceeds the cleanup goals are presented below.

ALTERNATIVE 1 - NO ACTION

A no action alternative is required by the NCP to be carried forward as a baseline for detailed comparison. Under this alternative, no action would be taken to remedy the contaminated surface soil at the site to reduce mobility, toxicity, or volume (M/T/V) of the waste. If no action is taken, future risks to persons living on and near the Site

will remain. Because hazardous contaminants would remain, a five (5) year would be required. The No Action Alternative would only involve the continued monitoring of the soil and groundwater quality at the site. Groundwater monitoring would be accomplished utilizing existing monitor wells. These wells would be sampled for lead on a quarterly basis for the first five years and annually for a remainder of twenty-five years. Soil monitoring would consist of surface soil sampling for the same parameter and frequency. Public health assessments would be conducted every five years and would allow EPA to assess the ongoing risks to human health posed by the site. The evaluations would be based on the data collected from soil and groundwater monitoring.

The present worth costs of Alternative 1 are estimated to be \$704,000.

ALTERNATIVE 2 - LIMITED ACTION

This alternative is identical to the No Action Alternative (Alternative 1) described above except that it includes implementation of institutional measures to control, limit, and monitor activities onsite. The objectives of institutional actions are to prevent prolonged exposure to contaminant concentrations, control future development or excavation at the site, and prevent the installation of water supply wells within the boundaries of the site. These objectives are accomplished by monitoring soil and groundwater at the site and limiting use and access by placing fences and deed restrictions on all properties within potentially contaminated areas. The effectiveness of institutional actions depends on their continued implementation.

Soil and groundwater monitoring can be used to evaluate the effectiveness of any remedial action in controlling releases from the site. Fences and deed restrictions are designed to prevent access/exposure to soil by limiting what can be done at the site. Restrictions would be placed on the site to limit its future use. This could be accomplished by recording in the property deeds that potentially hazardous surface soil is located on the property and that use restrictions have been imposed. If implemented correctly, they provide low-cost moderate protection against direct contact with contaminants. Deed restrictions and fences are potential mechanisms to limit and monitor activity on the property, and ensure that all contact with potentially contaminated surface soil is regulated and monitored.

The present worth costs of Alternative 2 are estimated to be \$761,000.

ALTERNATIVE 3 - EXCAVATION AND OFFSITE DISPOSAL

Alternative 3 includes excavation of surface soil that exceeds the remediation level and disposal in either a RCRA landfill or a solid waste landfill. Conventional excavation will be used to remove the top one foot of soil. The soil will be Toxicity Characteristic Leaching Procedure (TCLP) tested. If the soil exceeds the Land Disposal Restrictions (currently 5 ppm for lead), then the soil will be transported to a RCRA Subtitle C disposal facility. Prior to disposal, the facility will pretreat the soils using a stabilizer/solidifier such as a cement or pozzolan based agent. If the soil does not exceed the 5 ppm restriction, it can be transported to a Subtitle D solid waste landfill and disposed of directly without pretreatment. The excavated area would be backfilled with clean topsoil.

Groundwater monitoring on an annual basis, for at least five years, would be required to evaluate site progress.

The present worth costs of Alternative 3 if TCLP results determine that the soils are to be transported to a RCRA Subtitle D facility (nonhazardous landfill) are \$241,000.

The present worth costs of Alternative 3 if TCLP results determine that the soils are to be transported to a RCRA Subtitle C facility (hazardous landfill) are \$940,000.

COMPARATIVE ANALYSIS OF ALTERNATIVES

EPA has established criteria for use in comparing the advantages/disadvantages of each alternative. The alternatives are evaluated against one another by using the nine criteria on the following table. The nine evaluation criteria fall into three groups: threshold criteria, primary balancing criteria, and modifying criteria.

The following discussion compares the various alternatives to the criteria.

Overall Protection of Human Health and the Environment

Regarding surface soil concerns, Alternatives 1 and 2 do not eliminate exposure pathways and reduce the level of risk. However, Alternative 2 minimally reduces the level of human risk by way of deed restrictions and fencing.



CRITERIA FOR EVALUATING REMEDIAL ALTERNATIVES	
Alternative 1 and Alternative 2 do not limit migration of or remove existing surface soil contamination. Alternative 3 eliminates exposure pathways and greatly reduces the level	
of risk. In addition, Alternative 3 removes contamination and eliminates further migration.	In selecting a preferred cleanup alternation EPA uses the following criteria to evaluate each of the alternatives developed in the Feasibility Study (FS). The first two criteria are essential and must be met before an alternative is considered further. The next five are used to further evaluate options that meet the first two criteria. The final two criteria are used to further evaluate EPA's proposed plan after the public comment period has ended and comments from the community and the State have been received. All nine criteria are explained in more detail here.
Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)	
Alternatives 1 and 2 will not meet chemical-specific ARAR's for surface soil. Under Alternative 3, ARAR's will be met through excavation and offsite disposal at a properly designed facility.	! Overall Protection of Human Health and the Environment - Assesses degree to which alternative eliminates, reduces, or controls health and environmental threats through treatment, engineering methods, or institutional controls.
Cost	
A summary of the present worth cost which includes the capital as well as the operation and maintenance cost for each of the alternatives is presented within the explanation of the alternative. Greater detail is provided in the Faesibility Study.	! Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) - Assesses compliance with Federal/State requirements.
Implementability	
The implementability of an alternative is based on technical feasibility, administrative feasibility and the availability of services and materials. All components of each alternative are both technically and administratively feasible. Alternative 1 and 2 can be implemented immediately because fencing and monitoring equipment are readily available. For Alternative 2 in administrative terms, implementing this alternative may have its difficulties. Access restrictions are subject to changes in political jurisdictions, legal interpretations, and regulatory enforcement. As properties change hands, it is imperative that owners are informed of the deed restrictions and abide by them. Alternative 3 can be implemented. Excavation and landfill disposal are proven technologies. There is an identifiable RCRA Subtitle C facility that can properly treat and dispose of the soils. Access to Subtitle D facilities is also available. Excavation of the surface soil requires only conventional equipment.	! Cost - Weighing of benefits of a remedy against the cost of implementations.
	! Implementability - Refers to the technical feasibility and administrative ease of a remedy.
	! Short-Term Effectiveness - Length of time for remedy to achive protection and potential impact of contruction and implementation of the remedy.
	! Long-Term Effectiveness and Performance - Degree to which a remedy can maintain protection of health and environment once cleanup goals have been met.

Reduction of M/T/V Through Treatment

Alternatives 1 & 2 do not achieve reduction in M/T/V of the contaminants. Alternative 3 will only reduce the mobility of the contaminants.

! Reduction of Toxicity, Mobility, or Volume Through Treatment - Refers to expected performance of the treatment technologies to lessen harmful nature, movement, or amount of contaminants.

! State Acceptance - Consideration of State's opinion of the preferred alternatives.

! Community Acceptance --  
Consideration of public comments on the Proposed Plan.

Short Term Effectiveness

During the implementation of all the alternatives, both onsite workers and people surrounding the site will be protected when sampling the various media during review/reassessment every 5 years, when installing a fence around the site and from possible impacts caused by excavation activities. Risks from soil excavation and removal would be addressed in health and safety plans. There is no risk to the environmental receptors from implementation of any remedy, although, habitats could be disrupted during excavation activities.

Long Term Effectiveness and Permanence

The continued exposure of onsite receptors to surface soils is a potential long-term impact for Alternatives 1 and 2. The remediation level derived for protection of human health and the environment would not be met by Alternatives 1 and 2.

State Acceptance

The State of South Carolina's Department of Health and Environmental Control was consulted during the drafting of this Proposed Plan. They are in support of the Alternative selected in this Proposed Plan.

Community Acceptance

The purpose of this Proposed Plan and the upcoming comment period is to encourage input from the public during the remedy selection process. Community acceptance of the preferred alternative will be evaluated after the public comment period and will be described in the Record of Decision for the Site.

EPA's PREFERRED ALTERNATIVE

In summary, based on the information available at this time, EPA is proposing Alternative 3: Excavation and Offsite Disposal. Alternative 3 includes excavation of surface soil that exceeds the remediation level (of 400 ppm) and disposal in either a RCRA landfill or a solid waste landfill. Conventional excavation will be used to remove the top one foot of soil. The soil will be Toxicity Characteristic Leaching Procedure (TCLP) tested. If the soil exceeds the Land Disposal Restrictions (currently 5 ppm for lead), then the soil will be transported to a RCRA Subtitle C disposal facility. Prior to disposal, the facility will pretreat the soils using a stabilizer/solidifier such as a cement or pozzolan based agent. If the soil does not exceed the 5 ppm restriction, it can be transported to a Subtitle D solid waste

landfill and disposed of directly without pretreatment. The excavated area would be backfilled with clean topsoil.

Groundwater monitoring on an annual basis, for at least five years, would be required to evaluate site progress.

This alternative represents the best balance among the criteria used to evaluate remedies. Alternative 3 is believed to be protective of human health and the environment, would attain ARARs, would be cost effective, and would utilize permanent solutions and alternative treatment technologies or resource technologies to the maximum extent practicable.

Based on comments received from the public during the upcoming comment period, EPA, in consultation with SCDHEC, may later further modify the preferred alternative or select another remedial alternative presented in this Proposed Plan.

OPPORTUNITIES FOR PUBLIC INVOLVEMENT

EPA has developed a community relations program under Superfund to respond to citizens' concerns and needs for information as well as to enable residents and officials of a site community to participate in the decision-making process. Before EPA carries out or authorizes technical work on a site, EPA staff and/or EPA contractors prepare a Community Relations Plan (CRP) based upon discussions in the community with local leaders and private citizens. This plan identifies the techniques EPA will use to communicate effectively with the community during the remedial process. These communication efforts often include telephone contacts, small informal meetings or formal public meetings, news releases, correspondence and fact sheets. The CRP is available for review at the site information repository.

EPA establishes an administrative record and an information repository where reports and other documents are made available to citizens. The administrative record is a file which contains all information used by EPA to select a response action for the site under the CERCLA. A duplicate file is maintained at the Region IV EPA Office in Atlanta, Georgia. The information repository is a file that contains current information such a technical reports and reference documents regarding the site. The information repository documents can be reviewed at the library listed below. For information regarding the documents maintained in the administrative record and information repository, visit the library listed below or contact the EPA community relations coordinator for the site.

You are encouraged to visit the information repository and contact EPA and SCDHEC representatives listed in this document for additional information. EPA would also accommodate requests for informal meetings during the public comment period, to further explain the findings of the RI/FS and the Proposed Plan. Individuals interested in arranging briefings should contact EPA's Community Relations Coordinator for the Site.

TECHNICAL ASSISTANCE GRANTS ARE AVAILABLE

To assist communities in interpreting the technical findings at Superfund sites, communities may apply for Technical Assistance Grants of up to \$50,000. Congress and EPA have established requirements for the use of this grant. Citizens who are interested in a TAG may contact Ms. Cynthia Peurifoy at 1-800-435-9233.

FOR FURTHER INFORMATION

Remedial Project Manager

Yvonne Jones  
U.S. Environmental Protection Agency  
345 Courtland Street, NE  
Atlanta, Georgia 30365  
(404) 347-7791 EXT. 4122 or (800) 435-9233

Community Relations Coordinator

Cynthia Peurifoy  
U.S. Environmental Protection Agency  
345 Courtland Street, NE  
Atlanta, Georgia 30365  
(404) 347-7791 or (800) 435-9233

Regional TAG Coordinator

Rosemary Patton  
U.S. Environmental Protection Agency  
345 Courtland Street, NE  
Atlanta, Georgia 30365  
(404) 347-3931 Ext 6107

South Carolina Project Manager

Adrienne Felder  
South Carolina Department of Health & Environmental Control  
2600 Bull Street  
Columbia, South Carolina 29201  
(803) 734-5487

Administrative Record and Information Repository

Northeast Regional Library  
7490 Parklane Road  
Columbia, SC 29223  
(803) 736-6575  
HOURS  
Monday - Thursday  
9:00 am - 9:00 pm  
Friday & Saturday  
9:00 am - 6:00 pm

## GLOSSARY

**Administrative Record** - A file which is maintained and contains all information used by the EPA to make its decision on the selection of a response action under CERCLA. This file is required to be available for public review and a copy is to be established at or near the site, usually at the information repository. A duplicate file is maintained in a central location such as a regional EPA and/or state office.

**Applicable or Relevant and Appropriate Requirements (ARARs)** - Requirements which must be met by a response action selected by EPA as a site remedy. "Applicable" requirements are those mandated under one or more Federal or State laws. "Relevant and appropriate" requirements are those which, while not necessarily required, EPA judges to be appropriate for use in that particular case.

**Aquifer** - An underground geological formation, or group of formations, containing usable amounts of groundwater that can supply wells and springs.

**Baseline Risk Assessment** - An assessment which provides an evaluation of the potential risk to human health and the environment in the absence of remedial action.

**Carcinogens** - Substances that cause or are suspected to cause cancer.

**Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)** - A federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act (SARA). The Acts create a trust fund, known as Superfund, from taxes on chemical and petroleum companies, to investigate and clean up abandoned or uncontrolled hazardous waste sites.

**Feasibility Study (FS)** - See Remedial Investigation/Feasibility Study.

**Groundwater** - Underground water that fills pores in soils or openings in rocks. This water can be used for drinking, irrigation, and other purposes.

**Hazard Ranking System (HRS)** - A scoring system used by EPA and the state to evaluate relative risks to public health and the environment. A score is calculated based on actual or potential release of hazardous substances through the air, soils, surface water or groundwater. If the site scores above 28.5, the site is proposed for inclusion on the National Priorities List.

**Information Repository** - Materials on Superfund and a specific site located conveniently for local residents.

**Maximum Contaminant Levels (MCLs)** - The maximum permissible level of a contaminant in water that is consumed as drinking water. These levels are determined by EPA and are applicable to all public water supplies.

**National Priorities List (NPL)** - EPA's list of uncontrolled or abandoned hazardous waste sites eligible for long-term clean up under the Superfund Remedial Program.

**National Oil and Hazardous Substances Contingency Plan (NCP)** - The Federal regulation that guides the Superfund program.

**Noncarcinogens** - Substances that may cause other adverse health effects besides cancer.

**Parts Per Billion (ppb)/Parts Per Million (ppm)** - Units commonly used to express low concentrations of contaminants. For example, 1 ounce of Chloroform in 1 million ounces of water is 1 ppm. If one drop of Chloroform's are mixed in a competition sized swimming pool, the water will contain about 1 ppm Chloroform.

**Potentially Responsible Parties (PRP's)** - This may be an individual, a company or a group of companies who may have contributed to the hazardous conditions at a site. These parties may be held liable for costs of the remedial activities by the EPA through CERCLA Laws.

**Public Comment Period** - Time provided for the public to review and comment on a proposed EPA action or rule making after it is published as a Proposed Plan.

Record of Decision (ROD) - A public document that explains which cleanup alternative will be used at a National Priorities List site and the reasons for choosing the cleanup alternative over other possibilities.

Remedial Design/Remedial Action (RD/RA) - The remedial design (RD) is a plan formulated by either the PRP or EPA or both to provide the appropriate measures to remediate a hazardous waste site. This plan may be modified many times through negotiations between EPA and the PRP. The remedial action (RA) is the implementation of the remedial design.

Remedial Investigation/Feasibility Study (RI/FS) - Two distinct but related studies, normally conducted together, intended to define the nature and extent of contamination at a site and to evaluate appropriate, site-specific remedies.

Reasonable Maximum Exposure (RME) - A term used in the Baseline Risk Assessment. The RME is the highest exposure to contaminants that is reasonably expected to occur at a site as is based on the professional judgement of the risk-assessor.

Responsiveness Summary - A summary of oral and/or written public comments received by EPA during a comment period on key EPA documents and EPA's responses to those comments. The responsiveness summary is especially valuable during the Record of Decision phase at a site on the National Priorities List when it highlights community concerns for EPA decision-makers.

Resource Conservation and Recovery Act (RCRA) - A Federal law that establishes a regulatory system to track hazardous substances from the time of generation to disposal. The law requires safe and secure procedures to be used in treating, transporting, storing and disposing of hazardous substances. RCRA is designed to prevent the creation of new uncontrolled hazardous waste sites.

Superfund Amendments and Reauthorization Act (SARA) - Modifications to CERCLA enacted on October 17, 1986.

Volatile Organic Compounds (VOCs) - Organic compounds which easily change from a liquid to a gas when exposed to the atmosphere.

PALMETTO RECYCLING SUPERFUND SITE MAILING LIST COUPON

If you have had a change of address and would like to continue to receive site related information or would like for EPA to add your name and address to the mailing list for the Palmetto Recycling Superfund Site, please complete this self-addressed form. If you have any questions regarding this mailing list, please call Cynthia Peurifoy at 1-800-435-9233.

NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

\_\_\_\_\_

TELEPHONE: (     ) - \_\_\_\_\_

USE THIS SPACE TO WRITE YOUR COMMENTS

Your input on the Proposed Plan for the Palmetto Recycling Superfund Site is important in helping EPA select a final remedy for the site. You may use the space below to write your comments, then fold and mail. A response to your comment will be included in the Responsiveness Summary.

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<IMG SRC 0495223R> PALMETTO RECYCLING SUPERFUND SITE

PROPOSED PLAN PUBLIC COMMENT SHEET

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Fold on dashed lines, staple, stamp and mail

Name \_\_\_\_\_

Place

Address\_\_\_\_\_

Stamp

City\_\_\_\_\_State\_\_\_\_\_ Zip\_\_\_\_\_

Here

Cynthia Peurifoy, Community Relations Coordinator  
North Superfund Remedial Branch/Waste Division  
U.S. EPA, Region 4  
345 Courtland Street, NE  
Atlanta, GA 30365



Attachment B

Public Notices of Public Comment Period and Extension  
of Public Comment Period

NOVEMBER 21, 1994

METRO/REGION  
THE<IMG SCR 0495223S>STATE

UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY

<IMG SRC 0495223T>

PUBLIC COMMENT PERIOD  
Proposed Remedial Action Plan for the  
PALMETTO RECYCLING SUPERFUND SITE  
Columbia, Richland County, South Carolina  
November 22 - December 22, 1994

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PUBLIC MEETING  
TUESDAY, DECEMBER 6, 1994, 7:00 p.m.  
Fairlawn Community Center  
9128 Wilson Boulevard  
Columbia, South Carolina

The U.S. Environmental Protection Agency (EPA) has developed a Proposed Plan for remediation of contaminated soil at the Palmetto Recycling Superfund Site. The Proposed Plan summarizes the results of the Remedial Investigation of the Site and the alternative cleanup methods evaluated under the Feasibility Study. Three alternatives were studied: Alternative 1 - No Action, which provides only for continued monitoring of the Site; Alternative 2 - Limited Action, which provides for institutional measures to control, limit, and monitor activities at the Site; and Alternative 3 - Excavation and Offsite, Disposal of contaminated soil. After evaluating the alternatives against nine criteria, EPA and the South Carolina Department of Health and Environmental Control have identified Alternative 3 as the preferred cleanup method. This alternative provides for excavation of surface soil that exceeds a contaminant level of 400 parts per million and disposal of the soil in an offsite landfill.

The Proposed Plan and other Site documents are available at the Palmetto Recycling Superfund Site Information Repository in the Northeast Regional Library at 7490 Park Lane Road, Columbia, SC, (803) 776-0855. Citizens are encouraged to review the Proposed Plan and comment on it during the Public Comment Period, which opens on November 22 and closes on December 22. EPA may extend the Public Comment Period by 30 days if they receive a timely request for extension.

EPA will hold a Public Meeting on Tuesday, December 6 at 7:00 p.m. to present the Proposed Plan, answer questions, and discuss concerns. Interested citizens are encouraged to attend the Public Meeting, which will be held at the Fairlawn Community Center. Questions about the Site can be referred to Cynthia Peurifoy, EPA Community Relations Coordinator, at 1-800-435-9233. Written comments should be postmarked by December 22, 1994 and directed to:

Yvonne Jones, Remedial Project Manager  
U.S. Environmental Protection Agency  
345 Courtland Street, NE

Atlanta, GA 30365

UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY

<IMG SRC 0495223U>

EXTENSION OF PUBLIC COMMENT PERIOD  
Proposed Remedial Action Plan for the  
PALMETTO RECYCLING SUPERFUND SITE  
Columbia, Richland County, South Carolina  
November 22, 1994 - January 23, 1995

The U.S. Environmental Protection Agency (EPA) has extended the Public Comment Period for the Proposed Plan for remediation of contaminated soil at the Palmetto Recycling Superfund Site. The Public Comment Period, which opened on November 22 and was scheduled to close on December 22, will close on January 23, 1995.

The Proposed Plan summarizes the results of the Remedial Investigation of the Site and the alternative cleanup methods evaluated under the Feasibility Study. Three alternatives were studied: Alternative 1 - No Action, which provides only for continued monitoring of the Site; Alternative 2 - Limited Action, which provides for institutional measures to control, limit, and monitor activities at the Site; and Alternative 3 - Excavation and Offsite Disposal of contaminated soil. After evaluating the alternatives against EPA's nine criteria, EPA and the South Carolina Department of Health and Environmental Control have identified Alternative 3 as the preferred cleanup method. This alternative provides for excavation of surface soil that exceeds a contaminant level of 400 parts per million and disposal of the soil in an offsite landfill. The estimated present worth cost of this alternative is \$241,000 (nonhazardous waste landfill) to \$940,000 (hazardous waste landfill).

The Proposed Plan and other Site documents are available at the Palmetto Recycling Superfund Site Information Repository in the Northeast Regional Library at 7490 Park Lane Road, Columbia, SC (803) 776-0855. Citizens are encouraged to review the Proposed Plan and comment on it during the Public Comment Period.

Questions about the Site can be referred to Cynthis Peurifoy, EPA Community Relations Coordinator, at 1-800-435-9233. Written comments should be postmarked by January 23, 1995 and directed to:

Yvonne Jones, Remedial Project Manager  
U.S. Environmental Protection Agency  
345 Courtland Street, NE  
Atlanta, GA 30365

Attachment C

Written Public Comments Received  
During the Public Comment Period

South Carolina  
DHEC

Commissioner: Douglas E. Bryant  
Board: Richard E. Jabbour, DDS, Chairman  
William E. Applegate, III.  
Robert J. Stripling, Jr., Vice Chairman  
John H. Burriss  
Sandra J. Molander, Secretary  
Tony Graham, Jr., MD  
John B. Pate, MD  
Promoting Health, Protecting the Environment

Department of Health and Environmental Control  
Robert Mills Complex, Box 101106  
Columbia, SC 29211

Memorandum

TO: Lovyst L. Luker  
Project Administrator  
ATSDR Cooperative Agreement  
Division of Health Hazard Evaluation

FROM: William T. Going, MPH<IMG SRC 0495223V>  
Environmental Quality Manager  
ATSDR Cooperative Agreement  
Division of Health Hazard Evaluation

DATE: January 10, 1995

RE: Palmento Recycling Record of Decision

Attached are my comments for the Environmental Protection Agency's (EPA) draft Record of Decision (ROD) for the Palmetto Recycling site. The EPA released the draft ROD on November 22, 1994 to the public for comments by December 22, 1994. However, the EPA granted the public an extension for comments with a deadline of January 23, 1995.

Overall the ROD appears to be in line with the public health assessment. The ROD proposes to remediate surface soil that exceeds EPA's remediation levels for lead. The contaminated soil will be disposed of in a Resource Conservation and Recovery Act (RCRA) landfill or in a solid waste landfill. The excavated area will be backfilled with clean topsoil. It also proposes groundwater monitoring on an annual basis, for at least five years.

I feel like the soil excavation is needed. However, I also feel that the proposed remedy will not address public health concerns related to off-site soil contamination or groundwater contamination. I recommended that the EPA strengthen the remedy to include testing of private drinking water wells and community education for groundwater. I also recommend that additional off-site soil samples be collected from residential yards and from the dirt road that borders the site to the east. I feel that these samples are needed to fully characterize the extent of contamination at the site.

PALMETTO RECYCLING SITE

The South Carolina Department of Health and Environmental Control under cooperative agreement with the Agency for Toxic Substances and Disease Registry, submits the following comments for the draft Record of Decision, dated November 22, 1994, for the Palmetto Recycling site in Richland County, South Carolina.

1.0 SITE LOCATION AND DESCRIPTION

- 1) Paragraph 1. Second Sentence.

Please verify the longitude coordinate defined for the site. It appears that it should be reported at 81 °00'43".

2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

- 2) Please insert the following narrative between the fourth and fifth paragraphs on page 4:

In 1988, SCDHEC under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), released a preliminary health assessment for the Palmetto Recycling, Inc. site. The site was classified as a potential public health hazard based on the limited available data at the time. The preliminary health assessment recommended that additional investigations be completed to better characterize the site classification and to assess public health concerns.

3.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION

- 3) Please define the "XXXX" in the last sentence of the first paragraph.

5.0 SUMMARY OF SITE CHARACTERISTICS

- 4) Page 5, 2nd sentence in paragraph that continues from previous page.

This sentence states that 86 soil samples were collected during the Remedial Investigation (RI) and the last sentence of this paragraph states that the majority of the work was performed in April 1993, June 1993, March 1994, June 1994, and July 1994. However, the draft RI report states that 69 soil samples were collected. Later in the ROD (page 14, 5.3 Nature and Extent of Contamination, Surface Soil Samples, paragraph 1), the ROD states CDM collected 69 soil samples and the EPA collected 17 soil samples. However, it does not explain the rationale as to why, where, and when the EPA samples were collected after the remedial activities were completed.

In addition, the same sentence states that 3 surface water samples were collected and the draft RI states that 2 surface water samples were collected. Was the sample taken after the draft RI? If so, when and where was this sample collected and why was it collected?

6.0 SUMMARY OF SITE RISKS

- 5) The EPA should give greater consideration to the groundwater pathway even though the baseline risk calculations do not indicate that the contaminants in this pathway pose an adequate risk to human health. This recommendation is not based as much on scientific principles as it is based on the repeated concerns expressed by the public about the quality of their private drinking water wells. Based on the findings of EPA's private well survey, several residents who use or used private wells noted discolored water with a bad taste and bad odor; in addition, several residents have requested that their private well water be tested. On December 6, 1994, SCDHEC agreed to sample the private wells of area residents who desired this service.
- 6) In the ROD, the EPA has stated that it will conduct a review of the site "within five

years after commencement of remedial actions to ensure that the remedy continues to provide adequate protection of human health and the environment protection." Since many residents fear that site-related contaminants have impacted their private well water, the results of this sampling should be discussed with the public as it relates to the Palmetto Recycling site. The EPA should consider periodic sampling of the private wells in the area over this five-year period.

The current ROD will not address community concerns in regards to off-site human exposure to contaminants. The public has expressed concerns about possible contamination in the area of the off-site dirt road. We recommend that soil samples be collected from off-site locations including the area of the dirt road and from the residential yards that border the site along Koon Store Road. While there indeed may not be contamination in these areas, these samples are needed to fully characterize the extent of contamination at the site and to adequately address community health concerns. Figure 10 (attached) in the ROD that defines the "Approximate Areal Extent of Lead Contamination Above Remediation Levels in Surface Soil" supports this rationale since this area (in the southeast corner of the site) is adjacent to the dirt road that is east of the site and diagonally across from a residential yard.

### 7.3 ALTERNATIVE 3 - EXCAVATION AND OFFSITE DISPOSAL

- 7) The groundwater monitoring program under this option should be expanded to include testing of area private drinking water well residents who desire this testing. Community education should be considered to meet concerns expressed by the community about the quality of their drinking water.
- 8) We concur with the selected remedial activity - the excavation of on-site soil. However, we would like to see the community concerns of off-site soil contamination and groundwater contamination more adequately addressed.

<IMG SRC 0495223W>

-- South Carolina --

DHEC

Department of Health and Environmental Control  
2600 Bull Street, Columbia, SC 29201

Commissioner: Douglas E. Bryant

Board: Richard E. Jabbour, DDS, Chairman  
John H. Burriss  
Robed J. Stripling, Jr., Vice Chairman  
William M. Hull, Jr., MD  
Sandra J. Molander, Secretary  
Roger Leaks, Jr.  
Burner R. Maybank, III  
Promoting Health, Protecting the  
Environment

January 12, 1995

Ms. Yvonne Jones  
Remedial Project Manager  
USEPA  
345 Courtland Street, NE  
Atlanta, GA 30365

RE: Proposed Plan Fact Sheet (November 1994)  
Draft Record of Decision (ROD) November 1994  
Palmetto Recycling NPL Site  
SCD 037 398 120  
Richland County

Dear Ms. Jones:

The above referenced documents for the Palmetto Recycling site have been reviewed by the Department. Comments from Jim Bowman, SCDHEC Hydrologist, are attached in a memorandum to Adrienne Felder.

#### PROPOSED PLAN FACT SHEET

1. Page 5. Correct the date April 25, 1994 in the third paragraph, column one. It should be rewritten as April 25, 1984.
2. Page 11. Alternative 1 - No Action. Please review sentences two and three of this section. Some rewording may be necessary for clarity.
3. Page 13. Reduction of M/T/V Through Treatment. Please spell out M/T/V.
4. Page 14. Short Term Effectiveness. Please review the first sentence in this section. Some rewording may be necessary for clarity.
5. Page 15. The correct phone number for Adrienne Felder, South Carolina Project Manager, is (803) 896-4071.

#### DRAFT RECORD OF DECISION

1. Page iv. Table of Contents. The title of Section 7.0 - Description of Groundwater Remedial Alternatives should be rewritten as Section 7.0 - Description of Soil Remedial Alternatives.

<IMG SRC 0495223X>

Ms. Yvonne Jones  
January 12, 1995

DRAFT RECORD OF DECISION

2. Page 4. Third paragraph, fifth sentence. Correct the date to state April 25, 1984.
3. Page 27. The fourth sentence in the second complete paragraph should be rewritten for clarity.
4. Page 37. Please define the acronym TBC in the third paragraph of section 9.1.
5. Page 38. Two sections of 9.1.2 - ARARs appear on page 38. The second section of 9.1.2 should be section 9.1.3 - Performance Standards. Section 9.1.3 should include more discussion on soil excavation and confirmation soil sampling following the excavation to verify that soil remaining on site does not exceed 400 ppm.
6. Page 40. Table 3 (Continued). The rationale for soil discusses protective blood lead levels for children as 18 mg/dl. The protective blood lead levels for children should be 10 ug/dl.
7. Page 45. Section 10.0 - Documentation of Significant Changes should be renumbered as Section 11.0.

Please contact me regarding a letter of concurrence from the State of South Carolina.  
If I can be of further assistance, contact me at 803/896-4071.

Sincerely,

<IMG SRC 0495223Y>  
Adrienne Felder  
Site Engineering Section  
Division of Site Engineering & Screening  
Bureau of Solid & Hazardous Waste  
Management

Enclosure

cc: Jim Bowman  
R. Gary Stewart

-- South Carolina --

Commissioner: Douglas E. Bryant

DHEC

Board: Richard E. Jabbour, DDS, Chairman  
John H. Burriss  
Robed J. Stripling, Jr., Vice Chairman  
William M. Hull, Jr., MD  
Sandra J. Molander, Secretary  
Roger Leaks, Jr.  
Burnet R. Maybank, III  
Promoting Health, Protecting the Environment

Department of Health and Environmental Control  
2600 Bull Street, Columbia, SC 29201

RECEIVED

MEMORANDUM  
JAN 11 1995

TO: Adrienne Felder, Engineer  
Site Engineering Section  
Division of Site Engineering and Screening  
Bureau of Solid and Hazardous Waste Management  
SITE ENGINEERING & SCREENING  
BSHWM

FROM: Jim Bowman, Hydrologist <IMG SRC 0495223Z>  
Superfund Section  
Division of Hydrogeology  
Bureau of Solid and Hazardous Waste Management

DATE: January 9, 1995

RE: Proposed Plan Fact Sheet dated November 1994 and  
Draft Record of Decision (ROD) dated November 16, 1994  
Palmetto Recycling NPL Site  
SCD 037 398 120  
Richland County, South Carolina

The Division of Hydrogeology has completed a review of the above-referenced documents for the Palmetto Recycling NPL Site. Our comments on these documents are provided as follows:

A. PROPOSED PLAN FACT SHEET

1. Site Background, 3rd Paragraph, page 2: The Fact Sheet states that five groundwater monitor wells, installed by Raymond Knox Consultants, are located onsite. However, in September 1981, the month in which these five wells were installed, Raymond Knox was an employee of the Groundwater Protection Division of the Department. These five wells were installed by a contractor hired by Palmetto Recycling, but this contractor was not Raymond Knox. Please correct the statement concerning the five wells. We also recommend that EPA state the purpose of the five original monitor wells so that these wells are not confused with the monitor wells that were installed as part of the Remedial Investigation (RI).

B. DRAFT ROD

1. Section 1.0, Site Location and Description, Second Paragraph, page 1: The Draft ROD states that five groundwater monitor wells, installed by Raymond Knox Consultants, are located onsite. Please refer to Comment A.1. of this memorandum for our correction to this statement in the ROD concerning the five monitoring wells.

2. Section 3.0, Highlights of Community Participation, page 5: Information regarding the extension to the public comment period should be included in the second and third paragraphs of this section.

3. Section 7.3, Alternative 3- Excavation and Off-Site Disposal, page 33 and Section 9.1, Surface Soil Remediation, page 37: These sections should state that the soil excavation will be



followed up with soil testing for lead. The purpose of the soil testing is to ensure that excavation is successful in removing lead contamination above the remediation level (400 ppm) in the surface soil.

4. A list of references that are cited in Draft ROD should be provided at the end of the document.

J. Michael Hartnett  
Senior Attorney

Room E2060  
131 Morristown Road  
Backing Ridge, NJ 07920  
908-204-8435  
FAX 908 204-8565

January 20, 1995

VIA FACSIMILE

Ms. Cynthia Peurifoy  
U.S. Environmental Protection Agency  
North Superfund Remedial Branch  
345 Courtland Street, NE  
Atlanta Georgia 30365

Re: Palmetto Recycling Superfund Site

Dear Ms. Peurifoy:

As we discussed yesterday, I herewith provide AT&T's comments on the proposed plan for the subject site.

General Comments

In the Feasibility Study (FS) it is suggested at one point that the remediation of lead-contaminated surface soil should be focused on the removal of "hot spots." Elsewhere in the FS and in the proposed plan it is recommended or implied that gross excavation of soil take place. It is recommended that the documents be revised to consistently suggest limited hot spot removal.

The conclusion regarding ecological concerns contains the vague recommendation that a further ecological study "may be necessary." It is AT&T's view that since the potential for adverse ecological effects is low, the recommendation should be that further assessment is not warranted.

<IMG SRC 0495223BB>

Specific Comments

Final Remedial Investigation/Feasibility Study Report

Page	Location	Comment
1-15	¶ 1	This section states that the amount of dust detected at the site did not vary from background conditions. The amount of dust detected would not be expected to vary. It is the incidence of lead absorbed to the dust particles that would be the measure of concern. Can a concentration of lead in the dust be assumed to evaluate the potential for exposure due to airborne concentrations?
3-1	¶ 2	One background soil location will not adequately describe background conditions. The number of background samples collected should be statistically determined as described in Risk Assessment Guidance for Superfund.
3-5	Table 3-1	Additionally, several samples collected from one borehole do not constitute different background sampling locations. No solid borings were conducted in the former suspected dumping area. For completeness, subsurface soil conditions should have been evaluated in this area.
5-3	Table 5-1	Why was no well cluster installed north of well cluster #3 to monitor groundwater down gradient of the suspected liquid wastedumping area?

Page	Location	Comment
8-13	Table 8-5	The logic for using 400 mg/kg as the cleanup goal for lead in the surfare soil is not consistent with the guidance OSWER Directive #93-55.14-2 in which it is suggested that the UBK model be run iteratively until the acceptable blood lead levels and population effects are reached (10 ug/dl and 5%, respectively). In the FS, the average lead concentration (528 mg/kg) was used as input to the model, as opposed to the 95% UCL concentration (1,968 mg/kg).
11-4	¶ 2	This section states that a discount rate of five percent for present worth estimates was used. Recent correspondence with USEPA had indicated that a discount rate of 7 percent for feasibility study present worth estimate is currently being used.

#### Proposed Plan

Soil excavation and off-site disposal was the only remedial action considered for the site soils. Two options were within the soil excavation and disposal alternative Option 1 involves soil disposal at the Subtitle D solid waste facility at an estimated present worth cost of \$241,000. Option 2 involves soil disposal at a RCRA Subtitle C facility at an estimated present worth cost of \$941,000 in the Feasibility Study, it was stated that other alternatives such as the on-site treatment were not considered because the volume of soil requiring remediation (1,110 cubic yards) fell short of the 2,000 cubic yard cut-off typically used within the industry to evaluate whether soil is more cost effective treated on site or off site. However, since there is a significant difference in cost between Option 1 and Option 2 and since it is likely that the more expensive option will be required (i.e., excavated soils will exceed the 5 mg/l TCLP level for lead), AT&T believes that on-site treatment and disposal could prove cost effective. We recommend TCLP testing of the surface soil at the site prior to selection of the final remedy to determine if the soils can be disposed at a Subtitle D solid waste facility. If results indicate that the soil can be disposed at a Subtitle D facility, then we agree that the excavation and off-site disposal alternative is the most appropriate alternative. If test results indicate that the soil must be treated and disposed at the RCRA Subtitle C facility, then we recommend that on-site treatment and disposal be evaluated. Based on the depth and total volume of soil above the 400 mg/kg action level, on-site treatment by fixation/stabilization could be implemented using conventional earth-moving equipment. Fixation/stabilization is a well-demonstrated technology for the treatment of lead-contaminated soil. Although a detailed cost evaluation has not been performed, it is anticipated that on-site treatment and disposal could be implemented at a present worth cost of approximately \$350,000. This alternative would satisfy EPA's preference for treatment and would minimize lead exposure via contact with surface soils while eliminating the need to transport soils off site for disposal in a landfill.

Please address any questions you may have to me.

Very truly yours,

<IMG SRC 0495223CC>  
J. MICHAEL HARNETT

cc: J. McCarthy

Attachment D

Official Transcript of the Proposed Plan Public Meeting

1 STATE OF SOUTH CAROLINA)  
 )  
2 COUNTY OF RICHLAND )

3  
4  
5 - - -

6 UNITED STATES ENVIRONMENTAL  
7 PROTECTION AGENCY  
8 REGION IV  
9 PUBLIC INFORMATION MEETING  
10 FOR THE PALMETTO RECYCLING, INC.  
11 SUPERFUND SITE  
12  
13  
14

15 - - -

16 FAIRLAWN COMMUNITY CENTER  
17 COLUMBIA, SOUTH CAROLINA  
TUESDAY, DECEMBER 6, 1994  
7:10 P.M. - 9:20 P.M.  
18  
19  
20 - - -

21 COURT REPORTER: SHEILA STAGGS, CCR (GA)  
22 HANWELL REPORTING SERVICE  
23 920 MOHEGAN TRAIL  
WEST COLUMBIA, SOUTH CAROLINA 29169  
(803) 791-4127  
24  
25

HANWELL REPORTING SERVICE

1 APPEARANCES:

2

3

4 UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
5 REGION IV  
6 345 COURTLAND STREET, N.E.  
7 ATLANTA, GEORGIA 30365  
8 BY: CYNTHIA PEURIFOY, COMMUNITY RELATIONS  
9 BERNIE HAYES  
10 YVONNE JONES, PROJECT MANAGER  
11 JAN ROGERS

8

9 SOUTH CAROLINA DEPARTMENT OF HEALTH  
10 AND ENVIRONMENTAL CONTROL  
11 2600 BULL STREET  
12 COLUMBIA, SOUTH CAROLINA 29201  
13 BY: ENAYET ULLAH  
14 ERIC MELARO  
15 GARY STEWART  
16 GAIL JETER  
17 ADRIENNE FELDER  
18 CRAIG MARRINER  
19 JIM BOWMAN

14

15

16

17

18

E X H I B I T S

19 \* \* \* (NO EXHIBITS WERE MARKED) \* \* \*

20

21

22

23

24

25

HANWELL REPORTING SERVICE

1 MS. PEURIFOY: GOOD EVENING EVERYBODY.  
2 MY NAME IS CYNTHIA PEURIFOY AND I'M THE COMMUNITY  
3 RELATIONS COORDINATOR FOR E.P.A. REGION IV SOUTH  
4 CAROLINA SECTION OR THE NORTH SUPERFUND REMEDIAL  
5 BRANCH. WE'RE HERE TONIGHT TO TALK TO YOU ABOUT  
6 OUR WORK AT THE PALMETTO RECYCLING SITE. WE'RE  
7 HERE TONIGHT TO PRESENT YOU THE PROPOSED CLEAN UP  
8 PLAN FOR THE SITE. AND TO RECEIVE YOUR COMMENTS  
9 AND QUESTIONS.

10 TONIGHT'S MEETING PURPOSE AS I JUST SAID,  
11 WE'RE GOING TO SUMMARIZE THE REMEDIAL  
12 INVESTIGATION. WE'RE GOING TO GIVE YOU THE  
13 BACKGROUND OF THE SITE, THE FINDINGS OF THE  
14 REMEDIAL INVESTIGATION. WE'RE GOING TO SUMMARIZE  
15 THE BASE LINE RISK ASSESSMENT AND WE'RE GOING TO  
16 SUMMARIZE THE FEASIBILITY STUDY. WE'RE GOING TO  
17 PRESENT CLEAN UP ALTERNATIVES AND THEIR COSTS.  
18 AND WE'RE GOING TO PRESENT TO YOU OUR PREFERRED  
19 ALTERNATIVE FOR THE CLEAN UP OF THE SITE.

20 AND LAST BUT CERTAINLY NOT LEAST WE'RE GOING  
21 TO SOLICIT YOUR INPUT, YOUR COMMENTS, YOUR  
22 QUESTIONS, YOUR CONCERNS.

23 OKAY. WE'RE HERE BECAUSE THIS IS A  
24 SUPERFUND SITE. SO I WANT TO GO OVER WITH YOU A  
25 LITTLE BIT THE SUPERFUND PROCESS. THIS SITE HAS

HANWELL REPORTING SERVICE

1 GONE THROUGH QUITE A BIT OF THE PROCESS. WHEN A  
2 SITE IS DISCOVERED IT UNDERGOES A PROCESS WHERE  
3 IT IS RANKED. AND IF IT RANKS AND IT SCORES A  
4 SCORE OF 28.5 OR HIGHER IT IS LISTED ON THE  
5 NATIONAL PRIORITIES LIST. AT THAT TIME A  
6 REMEDIAL INVESTIGATION IS DONE AND A FEASIBILITY  
7 STUDY.

8 AND THERE YOU SEE BLOCK FIVE. WE HAVE  
9 PUBLIC COMMENTS. AND THAT'S WHY WE'RE HERE  
10 TONIGHT. I'M GOING TO GO AHEAD AND TELL YOU A  
11 LITTLE BIT ABOUT WHAT'S GOING TO HAPPEN NEXT.  
12 AFTER TONIGHT'S MEETING WE'RE GOING TO GO BACK.  
13 WE'RE GOING TO COMPLETE THE COMMENT PERIOD WHICH  
14 IS EXTENDABLE FOR ANOTHER 30 DAYS IF WE RECEIVE  
15 THAT TYPE OF REQUEST. AND THEN WE'RE GOING TO DO  
16 WHAT IS CALLED A RESPONSIVENESS SUMMARY. THAT IS  
17 A RESPONSE TO ALL THE COMMENTS THAT WE RECEIVE  
18 DURING THE COMMENT PERIOD. THAT BECOMES PART OF  
19 BLOCK 6, THE RECORD OF DECISION, WHICH IS A  
20 PUBLIC DOCUMENT THAT WILL BE ADDED TO THE  
21 INFORMATION REPOSITORY. AT THAT TIME WE WILL GO  
22 INTO NEGOTIATIONS AND WE WILL START WORKING ON  
23 THE DESIGN OF THE CLEAN UP PLAN. THAT'S BLOCK 7  
24 UP THERE. AND THEN WE WILL GO INTO THE ACTUAL  
25 CLEAN UP PROCESS.

HANWELL REPORTING SERVICE



1           NOW, I WANT TO GO OVER WITH YOU A LITTLE BIT  
2   OF THE COMMUNITY RELATIONS HISTORY OF THE SITE.  
3   WE WERE HERE IN JUNE OF '92 AND WE CONDUCTED  
4   COMMUNITY INTERVIEWS. WE HAD A PUBLIC MEETING  
5   HERE IN AUGUST OF '92. AND WE FINALIZE OUR  
6   COMMUNITY RELATIONS PLAN IN SEPTEMBER OF 1992.  
7   SOME OF THE THINGS THAT WE PUT IN THAT COMMUNITY  
8   RELATIONS PLAN THAT WE WOULD DO, WE WERE GOING TO  
9   ESTABLISH POINTS OF CONTACT WHICH WE DID BY  
10   LETTING YOU KNOW WHO I AM AND WHO THE PROJECT  
11   MANAGER WAS FOR THE SITE. WE HAVE A TOLL FREE  
12   NUMBER THAT YOU SHOULD ALL HAVE IN YOUR FACT  
13   SHEETS WHERE YOU CAN CALL US ANY TIME WITH ANY  
14   QUESTIONS OR CONCERNS. WE'VE HAD MEETINGS.  
15   PUBLIC MEETINGS. WE'VE DONE FACT SHEETS.  
16   WE'VE PUT OUT NEWS RELEASES TO TRY TO KEEP YOU  
17   UP-TO-DATE ON WHAT'S GOING ON. AND WE'VE  
18   ESTABLISHED AN INFORMATION REPOSITORY. WE  
19   MAINTAIN A MAILING LIST FOR THE SITE. AND OUR  
20   COMMUNITY RELATIONS PLAN CALLS FOR REVISION AS  
21   NEEDED.

22           I WANT TO ALSO TELL YOU A LITTLE BIT ABOUT  
23   TECHNICAL ASSISTANCE GRANTS. WE SPOKE ABOUT THIS  
24   WHEN WE WERE HERE BEFORE. TECHNICAL ASSISTANCE  
25   GRANTS ARE \$50,000 GRANTS THAT ARE AVAILABLE TO

HANWELL REPORTING SERVICE

1 COMMUNITY GROUPS THAT LIVE NEAR SUPERFUND SITES.  
2 IT IS GIVEN TO HIRE A TECHNICAL ADVISOR TO HELP  
3 YOU INTERPRET AND UNDERSTAND SITE RELATED  
4 TECHNICAL INFORMATION SUCH AS THE INFORMATION  
5 THAT'S GOING TO BE PRESENTED HERE TONIGHT.

6 COMMUNITY GROUPS DO HAVE TO CONTRIBUTE 20  
7 PERCENT. AND THAT CAN BE DONE THROUGH IN KIND  
8 SERVICES SUCH AS VOLUNTEERING YOUR TIME, PUTTING  
9 OUT NEWSLETTERS OR WHATEVER. IT'S NOT TOO LATE  
10 FOR A TECHNICAL ASSISTANCE GRANT. I WILL BE MORE  
11 THAN HAPPY TO WORK WITH YOU ANY WAY I CAN TO HELP  
12 YOU TO GET THAT DONE SHOULD YOU SO DESIRE.

13 NOW, I WANT TO INTRODUCE SOME PEOPLE TO YOU  
14 WHO ARE HERE TONIGHT FROM E.P.A. AND ALSO FROM  
15 THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND  
16 ENVIRONMENTAL CONTROL. FIRST OF ALL FROM E.P.A.  
17 THE PROJECT MANAGER FOR THE SITE IS MS. YVONNE  
18 JONES. SHE'S BACK HERE IN THE REAR. SHE'S GOING  
19 TO BE SPEAKING TO YOU QUITE A BIT TONIGHT. OUR  
20 SECTION CHIEF FOR THE SOUTH CAROLINA SECTION IS  
21 MR. JAN ROGERS AND HE'S IN THE REAR ALSO. AND WE  
22 HAVE WITH US ALSO FROM E.P.A. MR. BERNIE HAYES  
23 WHO'S ANOTHER PROJECT MANAGER IN OUR SECTION.

24 NOW, FROM OUR COLLEAGUES AT THE DEPARTMENT  
25 OF HEALTH AND ENVIRONMENTAL CONTROL WE HAVE

HANWELL REPORTING SERVICE

1 MR. GARY STEWART. WE HAVE MS. GAIL JETER. WE  
2 HAVE MS. ADRIENNE FELDER. WE HAVE MR. JIM  
3 BOWMAN. AND WE HAVE MR. ERIC MELARO. AND WE  
4 HAVE MR. ENAYET ULLAH.

5 NOW, I'M GOING TO TURN THE PRESENTATION OVER  
6 TO MS. JONES AND I WOULD ENCOURAGE YOU TO ASK  
7 QUESTIONS, GIVE US FEEDBACK HOWEVER YOU SO  
8 DESIRE. PLEASE MAKE SURE THAT WHEN YOU SPEAK  
9 TONIGHT THAT OUR COURT REPORTER CAN HEAR YOU AND  
10 IDENTIFY YOURSELF BECAUSE WE ARE MAKING A  
11 TRANSCRIPT OF THIS MEETING. THANK YOU.

12 MS. JONES: HELLO. BASICALLY I'M NOT  
13 REALLY USED TO WORKING WITH A MIKE SO IF AT ANY  
14 TIME THAT IT MAY APPEAR THAT YOU CANNOT MAKE OUT  
15 WHAT I AM SAYING FEEL FREE TO RAISE YOUR HAND.  
16 AND I'LL TRY AND SPEAK A LITTLE LOUDER.  
17 BASICALLY WHAT I WOULD LIKE TO DO TONIGHT IS FOR  
18 THE MOST PART SUMMARIZE THE SITE HISTORY, SITE  
19 BACKGROUND AND THE SITE LOCATION. IN ADDITION TO  
20 THAT I WOULD ALSO LIKE TO GIVE YOU A BRIEF  
21 SUMMARY OF WHAT WAS DONE DURING THE REMEDIAL  
22 INVESTIGATION AND WHAT THE RESULTS WERE FROM THE  
23 REMEDIAL INVESTIGATION. CAN EVERYBODY HEAR ME?  
24 OKAY.

25 BASICALLY AS EVERYONE KNOWS THE PALMETTO

HANWELL REPORTING SERVICE

1 RECYCLING SITE IS LOCATED APPROXIMATELY 8 MILES  
2 NORTH OF COLUMBIA, SOUTH CAROLINA, IN RURAL  
3 RICHLAND COUNTY. THE SITE IS POSITIONED BETWEEN  
4 U.S. ROUTES 321 AND U.S. ROUTE 21 ON THE NORTH  
5 SIDE OF KOON STORE ROAD.

6 FEATURES OF THE SITE ARE BASICALLY TO THE  
7 EAST OF THE SITE YOU HAVE A DIRT ROAD. I'M SURE  
8 EVERYONE IS FAMILIAR WITH DRY FORK CREEK. TO THE  
9 NORTH OF THE SITE YOU HAVE AN UNNAMED TRIBUTARY  
10 WHICH IS UPSTREAM OF DRY FORK CREEK. AS FAR AS  
11 THE SITE ITSELF THERE IS I GUESS APPROXIMATELY  
12 130 BY 170 FOOT ASPHALT PAD ON WHICH MOST OF THE  
13 PRODUCTION PROCESS TOOK PLACE. THERE WAS AN  
14 OFFICE BUILDING. AND AS EVERYONE IS PROBABLY  
15 AWARE OF, THERE WAS ALSO AN EXCAVATED PIT AREA  
16 WHICH NOW HAS BEEN BACK FILLED WITH SOIL WHICH IS  
17 KNOWN AS -- WE WOULD CALL IT THE FORMER TRUCK  
18 SCALE AREA.

19 IN ADDITION TO THIS PARTICULAR FIGURE THIS  
20 IS THE WORK SHED OR IT HOUSED THE WORK SHED WHICH  
21 IS REALLY WHERE A LOT OF THE PROCESS TOOK PLACE.

22 MS. BROWN: I BEG YOUR PARDON. THE  
23 WORK PLACE WAS THE BACK ONE BACK THERE, THE BACK  
24 BLOCK. THAT'S WHERE ALL THE WORK WENT ON. AND  
25 THEY HAD A CONVEYOR BELT THAT WENT FROM THERE

HANWELL REPORTING SERVICE

1 OVER TO THE SUMP TANK.

2 MS. JONES: THANK YOU. CAN YOU SEE  
3 THE TANKS WHERE YOU ARE?

4 MS. BROWN: YES, I CAN SEE IT.

5 MS. JONES: AND ALSO THE TANK SADDLE  
6 WHICH WAS PART OF THE PROCESS. BASED ON I GUESS  
7 INFORMATION FROM A PREVIOUS WORKER FROM THE SITE  
8 THIS PARTICULAR AREA WAS CONSIDERED AS THE  
9 DUMPING AREA. IT CONSISTED OF THE AREA WHICH  
10 HELD MATERIAL FROM BATTERY CASINGS, GROUND  
11 BATTERY CASINGS.

12 MS. BROWN: CASINGS BEING BURNED.

13 MS. JONES: CORRECT. AS FAR AS  
14 LOOKING AT SOME OF THE SITE HISTORY OF THE SITE,  
15 PRIOR TO 1979 FROM THE DATA THAT I HAVE BASICALLY  
16 READ THE OVERALL AREA OR THE AREA SURROUNDING THE  
17 SITE WAS CONSIDERED TO BE RURAL RESIDENTIAL. IN  
18 1979 THE PROPERTY WAS PURCHASED BY A COMPANY BY  
19 THE NAME OF PALMETTO RECYCLING INCORPORATED FOR  
20 THE PURPOSE OF OPERATING A BATTERY RECYCLING  
21 COMPANY. FROM 1979 TO 1983 THE FACILITY WAS  
22 INVOLVED IN THE RECLAMATION OF LEAD FROM THE  
23 BATTERIES. AS PART OF THE RECLAMATION PROCESS OF  
24 LEAD FROM THE BATTERIES BASICALLY I GUESS IN A  
25 NUTSHELL LEAD WAS BASICALLY RECLAIMED FROM THE

HANWELL REPORTING SERVICE

1 BATTERIES.

2 I DON'T KNOW IF ANY OF YOU HAVE EVER LOOKED  
3 IN A BATTERY. IT LITERALLY CONSISTS OF AN OUTER  
4 CASING WITH METAL PRONGS THROUGHOUT THE BATTERY.  
5 AND SULFURIC ACID DOWN IN THE BATTERY. WHAT  
6 WOULD ACTUALLY TAKE PLACE IS I GUESS DURING THE  
7 PROCESS THE LEAD WAS RECLAIMED AND BASICALLY THE  
8 SULFURIC WASTE JUST IN A NUTSHELL WAS YOU KNOW  
9 DISCHARGED.

10 IN 1981 OR AROUND THE AREA OF 1981 THE  
11 PALMETTO RECYCLING INC. AND REALLY JUST AFTER A  
12 PERIOD OF DISCHARGE TO THE LOCAL SEWER BASICALLY  
13 APPLIED FOR AN APPLICATION TO DISCHARGE HAZARDOUS  
14 WASTE WHICH I THINK EVERYONE HERE PRETTY MUCH  
15 KNOWS ABOUT. THAT PARTICULAR APPLICATION WAS  
16 DENIED BY DHEC. AND IN 1983 THE FACILITY FILED  
17 FOR BANKRUPTCY.

18 IN 1984 AS A RESULT --

19 MS. BROWN: MAY I INJECT SOMETHING  
20 RIGHT HERE?

21 MS. JONES: OKAY.

22 MS. BROWN: FROM 1979 TO 1983 THE  
23 COMPANY WAS NOT OPERATING ALL THAT TIME.

24 MS. JONES: CORRECT. BUT THEY WERE  
25 TRYING TO APPLY FOR A PERMIT.

HANWELL REPORTING SERVICE

1 MS. BROWN: AND DURING THE TIME THAT  
2 THEY DID TRY TO OPERATE THEY WERE OPERATING  
3 WITROUT THE FIRST PERMIT PERIOD.

4 MS. JONES: CORRECT. IN FACT FROM MY  
5 READING THEY WERE ALREADY DISCHARGING WHEN THEY  
6 --

7 MS. BROWN: DISCHARGING AND PUTTING  
8 ACID, BATTERY ACID, OVER AT OLDHAM'S GARAGE ON  
9 321 AS WELL AS ON THEIR OWN PROPERTY.

10 MS. JONES: CORRECT. I'M NOT REALLY  
11 FOR SURE WHY THEY EVEN MADE THE STATE AWARE BY  
12 OBTAINING A PERMIT.

13 MS. BROWN: WELL, WHEN WE FOUND THE  
14 RED TRUCK GOING UP AND DOWN THE ROAD THE ONES OF  
15 US THAT NOTICED IT IS THE ONES THAT CALLED DHEC'S  
16 ATTENTION TO IT IS HOW THEY FOUND THE BATTERY  
17 ACID BEING DISCHARGED INTO THE DRY CREEK BED.

18 MS. JONES: OKAY. I GUESS 1984 -- I  
19 GUESS YOU REMEMBER THE FIRE THAT OCCURRED.

20 MS. BROWN: 1984. YES. THAT'S WHEN  
21 THEY WENT DOWN THERE WHENEVER THE PEOPLE  
22 CONSIDERED THEIRSELF BANKRUPT AND TRYING TO SELL  
23 SOME OF THE PROPERTY AND THEY SET THE SHED ON  
24 FIRE.

25 MS. JONES: CORRECT. AS A RESULT OF  
HANWELL REPORTING SERVICE

1        THAT THE SHED THAT WAS COVERING I GUESS THE PIT  
2        AREA WHICH HELD THE SULFURIC ACID -- BECAUSE IT  
3        WAS NOT PROTECTED IT WAS BASICALLY LEFT OPEN FOR  
4        CONTAMINATED WASTE TO MAKE ITS WAY INTO THE  
5        SOILS. TO ADDRESS THIS IMMEDIATE HEALTH AND  
6        ENVIRONMENTAL RISK POSED BY THE SITE THREE  
7        ACTIONS WERE CONDUCTED BY DHEC. THE FIRST  
8        REMOVAL TOOK PLACE IN APRIL OF 1984. AND IT  
9        CONSISTED OF THE REMOVAL OF 10,000 GALLONS OF  
10       CONTAMINATED WATER AND APPROXIMATELY 100 DRUMS  
11       CONTAINING LIQUID WASTE.

12            IN OCTOBER OF 1985 -- AND OF COURSE THIS WAS  
13        AFTER THE SITE WAS REASSESSED. THE STATE REMOVED  
14        A TOTAL OF 365 TONS FROM THE SITE OF SOILS WHICH  
15        WERE CONTAMINATED.

16            IN 1986 --

17            MS. BROWN: DO YOU BY ANY CHANCE HAVE  
18        A MAP SHOWING WHERE THAT CONTAMINATION WAS  
19        REMOVED?

20            MS. JONES: I HAVE THOSE MAPS BUT I  
21        DON'T HAVE THOSE WITH ME. BASICALLY THE MAPS  
22        THAT I HAVE ARE JUST ROUGH SKETCHES. I CAN KIND  
23        OF SHOW YOU ABOUT WHERE IT IS USING A POINTER.  
24        BASICALLY FROM THE MAPS THAT WE HAVE SEEN AND  
25        AGAIN THOSE MAPS WERE LITERALLY HAND DRAWN SO YOU

            HANWELL REPORTING SERVICE



1 CAN'T REALLY GET AN ACCURATE -- THEY WERE NOT TO  
2 SCALE. BASICALLY IT LOOKED LIKE A LOT OF THE  
3 SOIL WAS REMOVED FROM THIS PART OF THE AREA TO  
4 MAYBE -- IT'S KIND OF HARD WITH THE LASER -- TO  
5 MAYBE OVER HERE AND MAYBE DOWN TO HERE. OR JUST  
6 TO SUM IT UP, RIGHT AROUND THE ASPHALT PAD. THAT  
7 MIGHT BE THE EASIEST WAY TO SAY IT.

8 MS. BROWN: WAS ANY TESTING DONE UNDER  
9 THE ASPHALT PAD?

10 MS. JONES: DURING THIS INVESTIGATION?

11 MS. BROWN: YES. DURING THAT  
12 INVESTIGATION OR SINCE.

13 MS. JONES: NO, MA'AM. THERE WAS SOME  
14 DONE DURING THE REMEDIAL INVESTIGATION CONDUCTED  
15 IN 1992.

16 MS. BROWN: UNDER THE ASPHALT?

17 MS. JONES: CORRECT. BUT NOT AT THE  
18 TIME THE REMOVAL WAS DONE. IN 1986 E.P.A.  
19 CONDUCTED A PRELIMINARY ASSESSMENT OF THE SITE  
20 AND BASED ON THE RESULTS OF THIS ASSESSMENT  
21 E.P.A. PROPOSED THE SITE FOR INCLUSION ON THE  
22 NATIONAL PRIORITIES LIST IN JUNE OF 1988. IN  
23 1989 THE PALMETTO RECYCLING SITE WAS FORMALLY  
24 ADDED TO THE NATIONAL PRIORITIES LIST WHICH FROM  
25 NOW ON I'LL PROBABLY SAY NPL ON OCTOBER 4TH,

HANWELL REPORTING SERVICE

1 1989. IN 1992 E.P.A. NEGOTIATED WITH POTENTIALLY  
2 RESPONSIBLE PARTIES WHICH FROM NOW ON I WILL SAY  
3 PRP'S. AND BASICALLY WHAT I MEAN ABOUT  
4 POTENTIALLY RESPONSIBLE PARTIES, THEY WOULD BE  
5 PARTIES THAT EITHER GENERATED THE WASTE OR  
6 TRANSPORTED THE WASTE TO THIS PARTICULAR SITE.  
7 HOWEVER, AFTER A SERIES OF NEGOTIATIONS THOSE  
8 BROKE DOWN AND E.P.A. BASICALLY CONDUCTED THE  
9 REMEDIAL INVESTIGATION AND THE FEASIBILITY STUDY  
10 WHICH AT THIS POINT I'LL START CALLING IT THE  
11 RI/FS.

12 BASICALLY AS YOU PROBABLY ALREADY KNOW A  
13 REMEDIAL INVESTIGATION LITERALLY IS A SITE  
14 INVESTIGATION WHICH BASICALLY GOES OUT, TRIES TO  
15 CHARACTERIZE THE SITE SO WE CAN DETERMINE WHAT  
16 THE EXACT NATURE AND EXTENT OF THE CONTAMINATION  
17 IS AT THE SITE. WHEN WE CONDUCT OR PERFORM A  
18 FEASIBILITY STUDY KNOWN AS AN FS BASICALLY THAT  
19 LOOKS AT DIFFERENT ALTERNATIVES ON HOW WE SHOULD  
20 OR HOW WE CAN CLEAN UP THE SITE.

21 AND IN 1992 E.P.A. CONDUCTED RI FIELD  
22 ACTIVITIES AT THE SITE. AND THAT OCCURRED IN  
23 1992. SINCE THEN THE E.P.A. HAS GONE BACK OUT TO  
24 THE SITE IN JUNE OF 1994 AND ALSO JULY 1994.

25 MR. FOGLE: CAN YOU IDENTIFY THE

HANWELL REPORTING SERVICE

1 PRP'S? IS THAT THE BANK THAT WAS HOLDING THE  
2 MORTGAGE FOR THE PROPERTY OR ARE YOU UNABLE TO  
3 IDENTIFY THEM?

4 MS. JONES: WELL --.

5 MS. BROWN: BECAUSE I LEARNED THAT  
6 AT&T HAD A PART OF IT.

7 MS. JONES: WELL, I GUESS I MIGHT  
8 LEAVE THIS QUESTION TO MR. ROGERS.

9 MR. ROGERS: THE FIVE PRP'S THAT WE  
10 WERE TALKING TO BACK EARLY ON ARE THOSE THAT HAD  
11 BEEN IDENTIFIED AS HAVING SHIPPED SOME WASTE  
12 THERE.

13 MR. FOGLE: THESE WERE PEOPLE WHO  
14 SHIPPED WASTE?

15 MR. ROGERS: YES. THE FACILITY  
16 OPERATORS WERE IN BANKRUPTCY AND THERE WERE OTHER  
17 THINGS THAT WE COULD NOT DO WITH SOME OF THOSE  
18 PEOPLE. WE'VE SINCE -- WELL, THIS WILL COME  
19 LATER, BUT WE BASICALLY DO A LITTLE MORE THOROUGH  
20 PRP SEARCH AS WE FINISH UP THE RECORD OF DECISION  
21 AND PURSUE IMPLEMENTATION JUST TO ENSURE THAT  
22 WE'VE LOOKED AT ALL AVENUES OF GETTING  
23 RESPONSIBLE PARTIES TO DO THE WORK. ON THE FRONT  
24 END WE TYPICALLY DO A QUICK SURVEY IN ORDER TO  
25 FIGURE OUT WHO'S LIABLE OR WHO'S MOST LIKELY

HANWELL REPORTING SERVICE

1 INVOLVED AT THE SITE, TRY TO NEGOTIATE WITH THEM.  
2 AND IF WE CAN'T REACH A CONCLUSION WE GO AHEAD  
3 AND DO THE STUDIES SUCH AS WE'VE DONE HERE.  
4 THERE WERE FIVE AND I DON'T KNOW THE NAMES OF  
5 THEM. YVONNE MIGHT REMEMBER SOME OF THEM.  
6 THAT'S IN THE PUBLIC RECORD.

7 MS. JONES: THAT'S WHAT I WAS  
8 WONDERING, IF WE WERE ALLOWED TO --

9 MR. FOGLE: IT'S IN THE RECORD.

10 MR. GRANT: I'M JOHN GRANT. THE  
11 QUESTION WAS WHAT BANK HAS A MORTGAGE OVER THERE.  
12 I BELIEVE THAT I'VE SEEN ON A TAX MAP THAT WHAT  
13 BANK WAS INVOLVED. I DON'T KNOW IF I CAN GET MY  
14 HANDS ON THOSE READILY. BUT I THINK THAT DID  
15 HAVE ALL THE PROPERTY COMING UP AND DOWN THE  
16 NORTH SIDE, TWO BANKS.

17 MR. ROGERS: THAT TYPICALLY -- THOSE  
18 ARE THE KINDS OF RECORDS WE WOULD USE TO MAKE  
19 SURE WE HAD A COMPLETE SEARCH IN TRYING TO  
20 EVALUATE ALL THE PEOPLE THAT WE SHOULD TRY TO NOW  
21 DEAL WITH TO SEE IF THEY WANT TO COME FORWARD AND  
22 PARTICIPATE IN THE CLEAN UP OF THE SITE. IT'S  
23 REALLY TWO MAIN AREAS OF TIME WHEN WE PURSUE  
24 THAT. BEFORE WE INITIATE A REMEDIAL  
25 INVESTIGATION AND THEN AFTER WE'VE DONE A RECORD

HANWELL REPORTING SERVICE

1 OF DECISION WE PURSUE HEAT AGAIN TO SEE IF  
2 SOMEBODY WANTS TO STEP IN AT THAT POINT.

3 MS. JONES: DO WE NORMALLY OR  
4 TYPICALLY RELEASE THE NAMES?

5 MR. ROGERS: THEY'RE IN THE RECORD I  
6 THINK.

7 MS. JONES: OKAY. DOES THAT ANSWER --  
8 BASICALLY TO SUMMARIZE THE RI ACTIVITIES E.P.A.  
9 COLLECTED 86 SOIL SAMPLES WHICH 24 OF THOSE WERE  
10 --

11 MS. BROWN: WAS THIS THIS YEAR?

12 MS. JONES: SOME WERE TAKEN BACK IN  
13 MAY OF 1992. AND ADDITIONAL SAMPLES WERE  
14 COLLECTED IN JUNE OF 1994 AND IN JULY OF 1994.  
15 TWELVE GROUND WATER SAMPLES WERE COLLECTED.  
16 THREE SURFACE WATER SAMPLES WERE COLLECTED.  
17 SOME ON SITE AND SOME WERE DOWNSTREAM OFF SITE.  
18 SIX SEDIMENT SAMPLES WERE COLLECTED AND SOME OF  
19 THOSE WERE ALSO ON SITE AND OFF SITE.

20 IN ADDITION TO THAT, E.P.A. CONDUCTED A  
21 PRIVATE WELL WATER USE SURVEY WITHIN I GUESS  
22 APPROXIMATELY A MILE RADIUS OF THE SITE.

23 MS. BROWN: WAS IT INDIVIDUAL WELL  
24 WATERS, THE PEOPLE THAT YOU TALKED TO ABOUT THAT  
25 OR JUST --

HANWELL REPORTING SERVICE

1 MS. JONES: INDIVIDUAL WELL WATERS.

2 MS. BROWN: WHEN YOU CONDUCTED THE  
3 PRIVATE WELL WATER USE DID YOU TALK TO  
4 INDIVIDUALS IN THE AREA OF KOON STORE ROAD OR YOU  
5 HAD KNOWLEDGE THROUGH THE CITY THAT SOME OF US  
6 WERE ON CITY WATER NOW?

7 MS. JONES: INDIVIDUALS WERE SPOKEN TO  
8 ON KOON STORE ROAD.

9 MS. BROWN: DO YOU KNOW WHO THOSE  
10 PEOPLE WERE?

11 MS. JONES: I HAVE A LIST OF THEM.  
12 APPROXIMATELY 36 TO 42 PEOPLE. AND SOME WERE  
13 ALSO LOCATED ON WILSON BOULEVARD. AND BASICALLY  
14 WHAT WE HAVE IT IS A PART OF THE RECORD WHERE  
15 EACH PARTICULAR RESIDENT HAD THEIR OWN I GUESS --

16 MS. BROWN: ALL OF US AT ONE TIME HAD  
17 OUR WELLS UNTIL WE WENT WITH CITY WATER.

18 MS. JONES: THAT'S REALLY WHAT THE  
19 SURVEY --

20 MS. BROWN: HE WAS TELLING ME THAT HIS  
21 WAS STILL OPERATING. I WAS TELLING HIM MINE IS  
22 NOT BECAUSE THE PUMP IS BROKE.

23 MS. JONES: REAL QUICK I CAN SHOW YOU  
24 WHERE THE SAMPLES WERE TAKEN. BASICALLY THESE  
25 WERE THE SOIL BORINGS THAT WERE TAKEN.

HANWELL REPORTING SERVICE

1 MS. BROWN: THE BORINGS WENT HOW DEEP?

2 MS. JONES: I THINK OUR DEEPEST ONE

3 WAS DOWN TO ABOUT 58 FEET.

4 MS. BROWN: 58 FEET?

5 MS. JONES: CORRECT. AND BASICALLY --

6 MS. BROWN: WELL TYPE BORINGS?

7 MS. JONES: CORRECT. THANK YOU.

8 BASICALLY I GUESS REAL QUICK WHEN YOU SEE

9 SOMETHING LIKE BH-6 OR BH-4, THAT'S JUST OUR WAY

10 OF LABELING WHAT EACH OF THOSE LOCATIONS WERE.

11 MS. BROWN: THE LITTLE INDICATOR UP AT

12 THE TOP TELLS WHAT THOSE DIFFERENT THINGS ARE

13 THERE.

14 MS. JONES: CORRECT. BASICALLY WE USE

15 THIS TO TRY TO DETERMINE WHAT THE GENERAL I GUESS

16 GEOLOGICAL FORMATION WE HAVE.

17 MS. BROWN: PUT THAT BACK UP THERE A

18 MINUTE. I WANT TO POINT OUT SOMETHING. IN THE

19 AREA RIGHT IN THE BACK OF WHERE THE FENCE IS

20 THERE OFF OF THE SCALES, THE FENCED IN AREA

21 THERE, IN BEHIND THAT AREA IS THE AREA THAT YOU

22 HAD ON YOUR OTHER MAP THAT YOU FOUND BEFORE YOU

23 GOT TO THAT UNNAMED DRY CREEK BED BACK THERE IS

24 WHERE THEY BURNED THE BATTERY CASINGS. WHAT WAS

25 FOUND THERE? THERE'S NO BORING THERE. NO SOIL

HANWELL REPORTING SERVICE

1       SAMPLE THERE AT ALL.

2                   MS. JONES:   WELL, BASICALLY -- AND I  
3       GUESS I SKIPPED OVER IT A LITTLE BIT.   I'M GOING  
4       TO SHOW ABOUT FOUR OR FIVE MORE SEGMENTS THAT  
5       WILL SHOW ALL OF THE SAMPLES THAT WERE TAKEN.  
6       THIS IS JUST SHOWING WHERE THE BORINGS WERE  
7       TAKEN.   BASICALLY WE WERE THINKING IF WE TRIED TO  
8       PUT ALL THE LOCATIONS ON ONE FIGURE IT WOULD  
9       REALLY CROWD IT TO THE POINT WHERE YOU COULDN'T  
10      REALLY SEE.

11                  MS. BROWN:   ANOTHER QUESTION.   THIS  
12      COMPANY YOU HAVE STATED THAT THEIR ON 1.5 ACRES.  
13      THIS IS.   BUT THESE PEOPLE BOUGHT 20 ACRESS.   WAS  
14      THERE ANY TESTING DONE IN THE REST OR ANY PARTS  
15      OF THE EXTRA 20 ACRES?

16                  MS. JONES:   NO, MA'AM.   THERE WERE  
17      NOT.   BASICALLY WHAT WE WERE CONSIDERING THE SITE  
18      AS FAR AS THE CONTAMINATED AREA WAS THIS.   REALLY  
19      SOME OF IT CONCERNING OR SOME OF IT CONTAINING OR  
20      BEING A PART OF THE UNNAMED TRIBUTARY, A LITTLE  
21      BIT OF DRY FORK CREEK.   THERE IS A DRAINAGE DITCH  
22      WHICH YOU CAN BARELY SEE FROM WHERE YOU ARE  
23      PROBABLY.   AND THEN EVERYTHING WITHIN THIS  
24      SQUARE, APPROXIMATE SQUARE.

25                  MS. BROWN:   WHEN THEY WENT BANKRUPT

                  HANWELL REPORTING SERVICE



1       THEY LOST ALL OF IT, DIDN'T THEY? NOT JUST THAT  
2       1.5 ACRES.

3               MS. JONES: CORRECT. WELL, TYPICALLY  
4       OR I SHOULDN'T SAY TYPICALLY BUT TRADITIONALLY  
5       WHAT E.P.A. WILL DO WHEN THEY GO OUT TO A SITE  
6       BASED ON PAST INFORMATION OR PAST DATA WHAT THEY  
7       WILL DO OR EVEN WHERE SAY FOR INSTANCE WHERE THE  
8       MAIN PROCESSORS WERE, FROM THAT STANDPOINT E.P.A.  
9       WILL ACTUALLY GO OUT AND TRY TO CHARACTERIZE THE  
10      SITE. IF IT LOOKS LIKE THE DATA IS LEANING  
11      TOWARDS MAYBE A HIGHER LEVEL CONTAMINATION AS YOU  
12      GO AWAY FROM THE SITE, THEN WE WOULD CONTINUE.  
13      WE WOULD INCREASE OUR SITE BOUNDARIES UNTIL WE  
14      FULLY HAVE DETERMINED THE EXTENT OF THE  
15      CONTAMINATION.

16             MS. BROWN: THE SOIL SAMPLES, THE  
17      WELLS AND WHAT HAVE YOU ARE ON THE 1.5 ACRES?

18             MS. JONES: CORRECT. AND SOME OF  
19      THOSE ARE LOCATED ON THE --

20             MS. BROWN: ON THE CREED BED AND ON  
21      ACROSS THE ROAD.

22             MS. JONES: OKAY. IF YOU'D LIKE WE  
23      CAN GO THROUGH THEM.

24             MR. ROGERS: GO THROUGH THE REST OF  
25      THEM.

              HANWELL REPORTING SERVICE

1 MS. JONES: BASICALLY, AND I'LL JUST  
2 SUM THIS UP REALLY REALLY QUICKLY SO I CAN SHOW  
3 YOU WHERE THE OTHER SAMPLES WERE TAKEN. WHAT WE  
4 FOUND FROM TAKING SEVERAL SOIL BORINGS AND ALSO  
5 WHEN WE INSTALLED THE 12 MONITORING WELLS, JUST  
6 LOOKING AT THE OVERALL GEOLOGICAL PICTURE, THE  
7 OVERALL AREA SEEMS TO BE A MIXTURE OF CLAY AND I  
8 GUESS SILT. AND SILT BEING THE MORE POROUS. SO  
9 WITH SILT BEING THE MORE POROUS AND THEN OF  
10 COURSE CLAY LOCATED WITHIN THIS AREA AND THEN OF  
11 COURSE SAND. AND REAL QUICK I'LL GO THROUGH  
12 WHERE THE SURFACE SOIL SAMPLES WERE TAKEN.  
13 BASICALLY THERE WERE 24 SURFACE SOIL SAMPLES  
14 TAKEN RANGING FROM A DEPTH OF ZERO OR FROM 1 TO  
15 12 INCHES.

16 THE REASON WHY WE HAVE SS DASH WHATEVER THE  
17 NUMBER IS VERSUS PR DASH WHATEVER THE NUMBER IS  
18 MAINLY THAT WAS OUR WAY OF DETERMINING WHEN THAT  
19 SAMPLE WAS TAKEN. THE SAMPLES LABELED SS DASH  
20 WHATEVER THE NUMBER WERE TAKEN BACK IN MAY OF  
21 1992. AND THE SAMPLES LOCATED PR DASH WHATEVER  
22 THAT NUMBER IS WERE THE SAMPLES TAKEN LATER THIS  
23 PAST SUMMER.

24 AND AGAIN REALLY THIS IS JUST THE SAME  
25 DRAWING SHOW THE SUB SURFACE SOIL BORINGS.

HANWELL REPORTING SERVICE

1                   MR. HICKS:  WHAT WAS DONE IN THE  
2   TESTING THAT WAS DONE THIS YEAR?

3                   MR. ROGERS:  THAT GETS SUMMARIZED  
4   LATER ON.

5                   MR. HICKS:  OKAY.

6                   MS. JONES:  BASICALLY THERE WERE 12  
7   MONITORING WELLS INSTALLED.  AND AS YOU NOTICED  
8   IT'S REALLY A CLUSTER OF THREE WELLS IN FOUR  
9   DIFFERENT AREAS.  WHAT MAYBE AN I WOULD MEAN OR  
10  AN S WOULD MEAN OR A D WOULD MEAN, S JUST MEANS  
11  IT'S A SHALLOW WELL.  AND IT'S PROBABLY DOWN TO  
12  ABOUT APPROXIMATELY 20 FEET.  AND I IS CONSIDERED  
13  AN INTERMEDIATE WELL WHICH IS EVEN FARTHER DOWN.  
14  AND THEN OF COURSE A DEEP WELL CAN GO ALL THE WAY  
15  DOWN TO 50, 60 FEET.  BASICALLY WE DO THAT TO TRY  
16  TO GET A FEEL OF WHAT'S HAPPENING TO GROUND WATER  
17  AT CERTAIN LEVELS INSTEAD OF JUST ONE LOCATION  
18  WHERE WE HAVE ONE DEPTH.

19                  AND OF COURSE THIS PARTICULAR FIGURE IS JUST  
20   SHOWING WHERE THE SURFACE WATER SAMPLES WERE  
21   COLLECTED AND THE SEDIMENT SAMPLES WERE COLLECTED  
22   WITHIN DRY FORK CREEK AND THE UNNAMED TRIBUTARY.

23                  SOMETHING I WOULD LIKE TO ADD, ONE OF THE  
24   SURFACE WATER SAMPLES WAS COLLECTED IN THE  
25   EVACUATION PIT OVER WHERE THE TRUCK SCALES WHICH

                  HANWELL REPORTING SERVICE

1       YOU MENTIONED EARLIER.   BASICALLY I GUESS DUE TO  
2       OR JUST AS A SAFETY PRECAUTION THERE WAS WATER IN  
3       THAT PARTICULAR PIT.   BASICALLY TO SAVEGUARD TO  
4       MAKE SURE THAT WE DIDN'T HAVE ANY PROBLEMS E.P.A.  
5       WENT OUT AND TESTED THE WATER TO MAKE CERTAIN IT  
6       WASN'T CONTAMINATED.   BASED ON THE RESULTS OF THE  
7       WATER IT WAS PUMPED OUT AND BACKFILLED WITH CLEAN  
8       SOIL.

9               MS. BROWN:   THE CLEAN SOIL CAME FROM  
10       WHERE?

11              MS. JONES:   USUALLY WE'LL BRING IT IN.  
12       AND OF COURSE IT IS TESTED JUST TO MAKE CERTAIN  
13       IT IS NOT CONTAMINATED.

14              MR. ROGERS:   IT CAME FROM OFF SITE.  
15       IT WAS TRUCKED IN.

16              MS. JONES:   WE WOULDN'T TAKE IT FROM  
17       THE SITE ITSELF.   BASICALLY I GUESS TO ANSWER  
18       MR. HICKS' QUESTION, BASICALLY THERE WAS SOIL  
19       CONTAMINATION AND IT WAS MOSTLY IN THE AREAS  
20       NORTHWEST AND SOUTHEAST OF THE ASPHALT PAD.   THE  
21       MAIN CONTAMINANTS OF CONCERN WERE LEAD, WHICH WE  
22       FOUND RANGING FROM 6.3 PARTS PER MILLION TO 6400  
23       PARTS PER MILLION.   IN ADDITION TO THAT WE DID  
24       HAVE ONE HIT OF 1,2-DICHLOROETHANE AT A RESULT OF  
25       .0076 PARTS PER MILLION.

              HANWELL REPORTING SERVICE

1 MS. BROWN: WHY WOULD THEY BE USING  
2 THAT? WHAT WERE THEY DOING WITH THAT OUT THERE?

3 MS. JONES: BASICALLY IT'S NORMALLY  
4 NOT NATIVE TO A LEAD BATTERY RECLAMATION PROCESS.

5 MR. ROGERS: THAT'S SUCH A SMALL  
6 CONCENTRATION. IT COULD HAVE JUST BEEN USED IN  
7 THE SHOP AREA AS A DEGREASER OR SOMETHING ELSE.  
8 AN ARTIFACT THAT SHOWED UP IN SOME OF THE  
9 SAMPLES.

10 MS. BROWN: AS A DEGREASER YOU SAY?

11 MR. ROGERS: I THINK THAT'S ONE OF THE  
12 USES OF IT.

13 MS. JONES: MAYBE TO PUT THIS IN A  
14 LITTLE BIT OF PERSPECTIVE, WHEN YOU LOOK AT LEAD  
15 WHICH IS 6.3 OR WE FOUND 6.3 PARTS PER MILLION TO  
16 6400 PARTS PER MILLION, CURRENTLY E.P.A. HAS A  
17 PROPOSED SCREENING LEVEL OF 400 PARTS PER MILLION  
18 WHICH IS CONSIDERED SAFE AND PROTECTIVE.  
19 BASICALLY 78 PERCENT OF OUR SAMPLES WERE BELOW  
20 THE 400 LEVEL. AND WE HAVE ONE SAMPLE WHICH IS  
21 THE 6400 AND THEN ANOTHER ONE WHICH WAS 1500  
22 PARTS PER MILLION.

23 MS. JONES: IN ADDITION TO THAT THE  
24 GROUND WATER WAS SAMPLED AND THE 12 WELLS. WHAT  
25 THE CONTAMINANTS OF CONCERN THAT WE FOUND OUT

HANWELL REPORTING SERVICE

1       THERE WERE CHLOROFORM, ARSENIC AND CHROMIUM.  
2       CHLOROFORM WAS FOUND AND DETECTED AT 6 PARTS PER  
3       BILLION. IT WAS ONLY DETECTED ONCE OUT OF 12  
4       SAMPLES. ARSENIC WAS DETECTED TWICE AND THE  
5       RANGE WAS FROM 19 PARTS PER BILLION TO 38 PARTS  
6       PER BILLION. CHROMIUM WAS DETECTED SIX TIMES AND  
7       THOSE RESULTS RANGED FROM THREE PARTS PER BILLION  
8       TO 25 PARTS PER BILLION. HOWEVER, ONLY TWO OF  
9       THOSE SAMPLES WERE CONSIDERED TO BE ABOVE  
10      BACKGROUND.

11               MS. BROWN: WELL, IS THIS CONSIDERED  
12      THE PORTIONS OF THE BATTERY ACID, WHAT WOULD BE  
13      IN BATTERY ACID NORMALLY?

14               MR. HAYES: CHROMIUM COULD BE.

15               MS. BROWN: MAYBE CHROMIUM IS THAT  
16      MUCH, BUT ARSENIC AND CHLOROFORM?

17               MR. HAYES: ARSENIC, NO, IS NOT  
18      TYPICALLY ASSOCIATED WITH A BATTERY CRACKING  
19      OPERATION. AND THE CHLOROFORM, THAT'S A LITTLE  
20      DIFFICULT TO EXPLAIN. YOU WOULDN'T EVEN USE THAT  
21      AS A DEGREASER OR SOLVENT AT A SITE LIKE THIS.  
22      SO THAT ONE'S A LITTLE BIT OF A MYSTERY. THE  
23      CHROMIUM COULD VERY WELL BE RELATED TO THE  
24      BATTERY CRACKING OPERATION. BUT THE OTHER TWO,  
25      THE ARSENIC COULD VERY WELL BE NATURALLY

              HANWELL REPORTING SERVICE

1 OCCURRING AS WELL.

2 MS. BROWN: NATURALLY OCCURRING IN THE  
3 SOIL OR WHAT?

4 MR. HAYES: YES. ARSENIC IS NOT AN  
5 UNCOMMON SOIL COMPONENT. IT'S AN ELEMENT THAT'S  
6 FOUND JUST AS A NATURAL COMPONENT OF SOILS IN  
7 SOME PLACES. PARTICULARLY IN THE PIEDMONT WHICH  
8 I KNOW WE'RE SORT OF ON THE BORDER OF THE  
9 PIEDMONT HERE. BUT PIEDMONT SOIL SAMPLES OFTEN  
10 CONTAIN A LITTLE ARSENIC.

11 MR. GRANT: THIS IS JOHN GRANT. WOULD  
12 CHLOROFORM POSSIBLY BE USED TO START UP SOME  
13 EQUIPMENT THEY MIGHT HAVE HAD?

14 MR. HAYES: I DON'T KNOW. I KNOW THAT  
15 THERE ARE -- I DON'T KNOW THAT I'VE EVER SEEN  
16 CHLOROFORM USED FOR THAT. MAYBE YOU HAVE. BUT I  
17 ALWAYS THOUGHT IT WAS SOME SORT OF ETHER THAT  
18 THEY USED.

19 MR. ROGERS: CHLOROFORM IS MORE OF A  
20 PRESERVATIVE. YOU SOMETIMES SEE IT AS A  
21 LABORATORY ARTIFACT. HERE IT SHOWED UP IN THE  
22 SAMPLE. IT COULDN'T BE WRITTEN OFF AS A  
23 LABORATORY ARTIFACT. WE CARRIED IT INTO THE  
24 DATA. IT'S WELL BELOW ANY HEALTH BASED LEVEL OF  
25 CONCERN IN GROUND WATER.

HANWELL REPORTING SERVICE

1 MS. BROWN: BOTH OF THEM ARE WELL

2 BELOW?

3 MS. JONES: CORRECT. FOR CHLOROFORM

4 WE HAD SIX AND THE PROTECTIVE LEVEL IS 100. SO

5 THAT'S 94 PARTS PER BILLION LESS. FOR ARSENIC

6 OUR HIGHEST HIT WAS 38 AND THE LEVEL WAS 50 PARTS

7 PER BILLION. AND FOR CHROMIUM THE HIGHEST HIT

8 WAS 25 PARTS PER BILLION. AND THE LEVEL FOR THAT

9 WHICH WOULD BE CONSIDERED PROTECTIVE IS 100.

10 MS. BROWN: THAT'S E.P.A. STANDARDS?

11 MS. JONES: THAT'S FEDERAL DRINKING

12 WATER STANDARDS. IT WAS CONSIDERED SAFE TO HAVE

13 IN YOUR DRINKING WATER.

14 MR. HICKS: IF YOU CONTINUE TO DRINK

15 THIS WATER WITH THIS 19 PERCENT ARSENIC FOR A

16 PERIOD OF TIME IT WOULD HAVE SOME KIND OF EFFECT

17 ON YOU, WOULDN'T IT?

18 MR. ROGERS: NO. THE MCL STANDARDS

19 ARE BASED ON LONG-TERM EXPOSURES. THERE'S BEEN

20 NO DEMONSTRATED ADVERSE HEALTH RISK RELATED TO

21 THOSE LEVELS.

22 MS. HICKS: MY NAME IS LOVOLA HICKS.

23 THE 12 WELLS THAT YOU MONITORED, ARE THEY PRIVATE

24 RESIDENTIAL WELLS OR DID YOU GO DRILL THOSE WELLS

25 YOURSELF JUST FOR THE TESTING?

HANWELL REPORTING SERVICE



1 MS. JONES: THOSE WERE INSTALLED FOR  
2 THE PURPOSES OF THE TESTING.

3 MS. HICKS: DID YOU ACTUALLY GO OUT TO  
4 THE RESIDENCE AND CHECK THEIR WELLS TO THE PEOPLE  
5 ON KOON STORE ROAD?

6 MS. JONES: CORRECT.

7 MS. HICKS: DO YOU HAVE A LISTING OF  
8 THE PEOPLE THAT YOU CHECKED THEIR WATER?

9 MS. BROWN: I HAD ASKED HER THAT  
10 EARLIER.

11 MR. ROGERS: SHE ASKED DID YOU SAMPLE  
12 ANY PRIVATE WELLS.

13 MS. JONES: NO, MA'AM.

14 MS. HICKS: YOU DUG YOUR OWN WELLS AND  
15 YOU CHECKED YOUR OWN WATER?

16 MS. JONES: CORRECT. I THINK I'M  
17 HEARING, UNDERSTANDING.

18 MR. HAYES: THE WELLS THAT WERE  
19 SAMPLED WERE DRILLED SPECIFICALLY FOR THE  
20 INVESTIGATION.

21 MS. HICKS: SO YOU DIDN'T GO OUT AND  
22 CHECK THE RESIDENTS OF CONCERN IN THE SURROUNDING  
23 AREA?

24 MR. HAYES: NO. ALL THAT WE DID WAS  
25 TO CHECK TO SEE IF THERE WERE WELLS IN USE. NONE

HANWELL REPORTING SERVICE

1 OF THOSE WELLS WERE SAMPLED.

2 MS. HICKS: THAT'S WHAT I WANTED TO  
3 KNOW.

4 MR. HICKS: SO THE WELLS THAT ARE IN  
5 USE NOW YOU DIDN'T WHICH MEANS THERE'S A  
6 POSSIBILITY THEY COULD BE CONTAMINATED ALSO?

7 MS. JONES: CORRECT. MAINLY --

8 MR. ROGERS: THAT'S NOT REALLY  
9 CORRECT. THE REASON WE DON'T USE PRIVATE WELLS  
10 IS THESE WELLS ARE INSTALLED WITH VERY SPECIFIC  
11 STANDARDS OF MATERIALS AND OTHER THINGS BECAUSE  
12 THE CONCENTRATIONS YOU'RE LOOKING AT ARE VERY  
13 SMALL. IF WE GO OUT AND TEST YOUR PRIVATE WELL  
14 WE MAY FIND A HIT SOMEWHERE IN THESE ACTUAL  
15 NUMBERS, NOT THE MCL BUT THE ACTUAL NUMBERS OF  
16 SOME MATERIAL THAT WE HAVE NO WAY OF EXPLAINING  
17 BECAUSE WE DON'T KNOW HOW YOUR WELL WAS PUT IN.  
18 IT COULD BE INTRODUCED BY CONTAMINANTS IN THE  
19 TYPES OF MATERIALS THAT WERE USED IN THE WELL OR  
20 ANY NUMBER OF OTHER WAYS IT WAS INTRODUCED IN THE  
21 WELL. WHEN WE DO A STUDY OF A SITE WE PUT IN OUR  
22 OWN WELLS THAT WE NO ARE BASICALLY PRISTINE CLEAN  
23 TO LOOK AT THE AQUIFER FROM SEVERAL DIFFERENT  
24 LEVELS AROUND THE SITE IN THE PREDOMINANT  
25 DIRECTION OF GROUND WATER FLOW. AND WE USE THE

HANWELL REPORTING SERVICE

1 WELLS TO CONFIRM THAT THAT IS THE DIRECTION OF  
2 GROUND WATER FLOW. AND IT ALSO TELLS US A  
3 PICTURE OF WHAT'S UNDER THE SITE. AND IF YOU  
4 KNOW ANYTHING ABOUT SUPERFUND SITES, THERE'S A  
5 GREAT DEBATE AS TO WHETHER WE'LL EVER BE ABLE TO  
6 CLEAN UP AQUIFERS THAT ARE CONTAMINATED BECAUSE  
7 IT DOESN'T FLUSH OUT OF THERE CLEAN AFTER IT'S  
8 BEEN THROUGH THERE. SO THE WELLS ON SITE SHOULD  
9 HAVE SHOWN SOME ELEVATED CONTAMINATIONS IF THERE  
10 WERE IN FACT A BIG PROBLEM THAT HAD PASSED  
11 THROUGH AND MOVED OFF SITE. SO TYPICALLY WE  
12 START ON SITE AND AROUND THE SITE LOOKING AT THE  
13 GROUND WATER THERE, SEE IF THERE'S ELEVATED  
14 CONCENTRATIONS AND THEN WE WOULD FOLLOW IT OUT.  
15 IN THIS CASE WE DIDN'T FIND ANY. AND IT WOULD BE  
16 EXTREMELY UNUSUAL FOR THOSE MATERIALS TO WASH OUT  
17 CLEAN IF THERE HAD BEEN WHAT WE WOULD CALL A  
18 PLUME IN THE GROUND WATER THAT HAD GONE THROUGH  
19 THE AREA FROM A DISCHARGE AT THE SITE AND THEN  
20 MOVED DOWN GRADIENT. SO IT'S VERY UNLIKELY THAT  
21 YOU HAVE ANYTHING IN YOUR WELLS. BUT WE DON'T  
22 RUN OUT AND CHECK --

23 MS. BROWN: BEFORE THAT COMPANY WENT  
24 IN DOWN THERE THAT WAS WOODS. A WOODED AREA.  
25 NOW, HOW WOULD THAT ARSENIC AND CHLOROFORM GET

HANWELL REPORTING SERVICE

1 INTO THAT AREA UNLESS IT WAS USED IN THAT AREA?

2 MR. ROGERS: CHLOROFORM IN THAT LOW A  
3 CONCENTRATION COULD BE LIKE I SAY ANY NUMBER OF  
4 THINGS. IT COULD BE LABORATORY ARTIFACT. IT  
5 COULD HAVE BEEN INTRODUCED IN THE LAB. WE DON'T  
6 THINK SO. WE DO RUN CONTROLLED SAMPLES. BUT THE  
7 ARSENIC, IT CAN BE NATURALLY OCCURRING. THE  
8 CHROMIUM TO SOME EXTENT CAN SHOW UP NATURALLY.  
9 JUST BASED ON THE WAY WE HAVE TO TAKE THE SAMPLES  
10 WE TAKE THE SAMPLE OF GROUND WATER AND WE CANNOT  
11 FILTER IT. SO IF IT HAS SUSPENDED SEDIMENT IN IT  
12 IT CAN INTRODUCE ARSENIC HITS AND OTHER THINGS.

13 MS. BROWN: ISN'T CHROMIUM CONSIDERED  
14 A HEAVY METAL?

15 MR. ROGERS: YES. ARSENIC AND  
16 CHROMIUM AND LEAD ARE ALL HEAVY METALS.

17 MR. HAYES: JUST A LITTLE FURTHER,  
18 THESE ARE THE WELLS THAT WERE SAMPLED AS PART OF  
19 THE INVESTIGATION. AND THESE ARE WELLS AS JAN  
20 SAID THAT WERE DRILLED SPECIFICALLY FOR THE  
21 PURPOSES OF INVESTIGATION. THEY ARE NOT DRINKING  
22 WATER WELLS. THEY WERE NEVER USED FOR DRINKING  
23 WATER WELLS. THEY WON'T EVER BE USED. BUT THESE  
24 WELLS THAT ARE RIGHT ON THE SITE AS JAN SAID, IF  
25 THERE WAS GROUND WATER CONTAMINATION IT WOULD BE

HANWELL REPORTING SERVICE

1       IN THESE WELLS BECAUSE THAT'S WHERE THE  
2       CONTAMINATION WOULD BE COMING FROM.

3               MS. BROWN:   AND THE FLOW OF THE LAND  
4       FALLS THAT WAY ANYWAY.

5               MR. HAYES:   RIGHT.   SO IF WE DON'T GET  
6       ANY CONTAMINATION AS WE DIDN'T IN ANY OF THESE ON  
7       SITE WELLS THEN THE ODDS OF ANY WELL FARTHER AWAY  
8       BEING CONTAMINATED IS VERY REMOTE, ALMOST NON  
9       EXISTENT.   SO AS JAN WAS SAYING IF WE CHECK ON  
10      SITE AND WE DON'T GET ANY GROUND WATER  
11      CONTAMINATION FROM WELLS THAT WE DRILL ON SITE  
12      SPECIFICALLY FOR THAT PURPOSE, THEN THERE'S  
13      ALMOST NO CHANCE THAT ANY OFF SITE WELLS WERE  
14      CONTAMINATED FROM THE SITE.

15              MS. JONES:   I GUESS I NEED TO CORRECT  
16      MY ANSWER TO YOUR QUESTION.   I ANSWERED CORRECT  
17      THAT WE DID NOT TEST YOUR WELLS BUT WE DID TEST  
18      WELLS ON SITE.

19              MS. HICKS:   SO YOU'RE TELLING ME FROM  
20      1979 TO 1983 WHEN THEY OPERATED AND THEN YOU CAME  
21      ALONG IN 1994 AND 1992 AND TESTED -- WHEN DID YOU  
22      DIG THOSE WELLS?

23              MS. JONES:   MAY OF 1992.

24              MS. HICKS:   SO FROM '79 TO '83 WHEN  
25      THEY OPERATED YOU'RE TELLING ME THAT THE WATER

              HANWELL REPORTING SERVICE

1       COULDN'T HAVE TRAVELLED ANY PLACE ELSE, THE SOIL  
2       COULDN'T HAVE GONE ANY PLACE ELSE, BUT REMAINED  
3       IN THAT AREA?

4               MS. JONES:   CORRECT.   BASICALLY THE  
5       GROUND WATER FLOW FOR THIS PARTICULAR SITE IS AN  
6       AVERAGE OF LIKE .00 --

7               MS. HICKS:   WHERE DID YOU GET THIS  
8       INFORMATION FROM, WHAT BOOK?

9               MR. ROGERS:   IT'S A CALCULATED NUMBER  
10       FROM ACTUAL SAMPLES THAT WERE DONE.

11              MS. HICKS:   THERE'S NO PLACE I CAN GO  
12       AND LOOK IT UP?

13              MR. ROGERS:   IT'S IN THE RECORDS.  
14       IT'S IN THE E.P.A. RECORD.

15              MS. BROWN:   THIS IS E.P.A.   DHEC DID  
16       HAVE MONITORING WELLS DOWN THERE AT ONE TIME.  I  
17       DON'T KNOW WHETHER OR NOT THEY'RE STILL DOWN  
18       THERE.

19              MR. ROGERS:   AS PART OF THE REMEDIAL  
20       INVESTIGATION WE REVIEWED THE TECHNICAL DOCUMENTS  
21       THAT ARE IN THE RECORD CENTER.  THE REMEDIAL  
22       INVESTIGATION SHOULD SHOW RESULTS FROM ANY GIVEN  
23       WELL AND IT SHOULD SHOW ALSO HAVE PROBABLY AN  
24       APPENDIX OF THE CALCULATIONS OF ESTIMATED GROUND  
25       WATER FLOWS AT THE SITE.

              HANWELL REPORTING SERVICE

1                   MR. HAYES: GROUND WATER MOVES VERY  
2                   VERY SLOWLY.

3                   MS. HICKS: THE OLD SAYING STILL WATER  
4                   RUNS DEEP DOESN'T APPLY ANYMORE?

5                   MR. HAYES: NO. THAT'S STILL TRUE.

6                   MS. JONES: ANY QUESTIONS REGARDING  
7                   THIS PARTICULAR SITE? OKAY. BASICALLY AS FAR AS  
8                   SEDIMENT CONTAMINATION, THERE WERE TWO  
9                   CONTAMINANTS OF CONCERN. ONE WAS ARSENIC AND  
10                  BERYLLIUM. THOSE CONTAMINANTS OF CONCERN HOWEVER  
11                  FROM A RISK STANDPOINT ARE WITHIN E.P.A.'S  
12                  ACCEPTABLE TARGET RANGE. AND BASICALLY MR. HAYES  
13                  WILL GO OVER THAT WITH YOU MORE IN DEPTH WHEN HE  
14                  TALKS ABOUT THE RISK ASSESSMENT.

15                 AS FAR AS THE SURFACE WATER CONTAMINATION TO  
16                 TRY TO GET A FEEL OF WHAT SHOULD BE OUT AND WHAT  
17                 IS NORMAL FOR THAT PARTICULAR STREAM THERE WERE  
18                 NO CONTAMINANTS OF CONCERN WHICH EXISTED FOR THAT  
19                 AREA.

20                 MS. BROWN: YOU DIDN'T FIND ANY LEAD  
21                 AT ALL IN THAT FIRST CREEK?

22                 MS. JONES: NOT TO THE LEVEL WHICH  
23                 WOULD WARRANT CONCERN.

24                 MR. ROGERS: TYPICALLY YOU WOULDN'T  
25                 EXPECT THAT BECAUSE THAT IS A DYNAMIC ENVIRONMENT

                  HANWELL REPORTING SERVICE

1 WHERE YOU HAVE THE SITE DIDN'T EXIST AFTER ABOUT  
2 '83. THE DHEC PEOPLE WENT IN AND DID A  
3 SIGNIFICANT REMOVAL IN THE MID '80S AND IT REALLY  
4 WAS VERY LIMITED FROM ANYTHING FROM THE SURFACE  
5 TO ROLL OFF THE SITE INTO THOSE STREAMS.

6 MS. BROWN: BUT THEY HAD DUMPED INTO  
7 THAT CREEK?

8 MR. ROGERS: I KNOW, BUT IT WILL WASH  
9 OUT.

10 MS. BROWN: LEAD DOESN'T THOUGH.

11 MR. ROGERS: WELL, IT'S SOLUABLE  
12 USUALLY. WHERE YOU WILL SEE IT IS IN THE  
13 SEDIMENT. YOU WON'T SEE IT IN THE WATER BECAUSE  
14 ALL THAT WATER IS JUST WATER FLUSHING THROUGH  
15 THERE NOW. IT WILL PICK UP CONTAMINATION OF THE  
16 SEDIMENT BUT YOU GENERALLY WON'T SEE IT IN THE  
17 WATER BECAUSE ALL THE CONTAMINATION OCCURRED  
18 WHAT, TEN YEARS AGO. IT'S ALL FLUSHED OUT.

19 MS. BROWN: BERYLLIUM ALSO IS A HEAVY  
20 METAL, ISN'T IT?

21 MR. ROGERS: YES. BOTH OF THOSE SHOW  
22 UP FREQUENTLY AT SITES AND THEY'RE NATURALLY  
23 OCCURRING.

24 MS. JONES: BASICALLY THIS CONCLUDES I  
25 GUESS THE REMEDIAL INVESTIGATION FINDINGS. AT

HANWELL REPORTING SERVICE



1       THIS TIME MR. BERNIE HAYES WILL BASICALLY GO  
2       THROUGH THE BASELINE RISK ASSESSMENT AND PRESENT  
3       WHAT THE RISK WERE OR WERE NOT AT THE SITE.

4               MR. HAYES:  THANK YOU, YVONNE.  GOOD  
5       EVENING.  MY NAME IS BERNIE HAYES AS YVONNE SAID.  
6       I APPRECIATE YOU ALL COMING OUT TONIGHT.  I BET  
7       YOU'RE STARTING TO WONDER WHETHER THEY BROUGHT ME  
8       JUST TO FLIP THOSE SLIDES OR NOT.

9               I'M GOING TO TALK A LITTLE BIT ABOUT THE  
10      RISK ASSESSMENT.  WE THROW THE TERM RISK  
11      ASSESSMENT AROUND A LOT.  SO I'LL GIVE YOU A  
12      LITTLE INTRODUCTORY DISCUSSION ON WHAT WE MEAN BY  
13      SOME OF THESE TERMS.  RISK ASSESSMENT IS AN  
14      ATTEMPT TO QUANTIFY THE RISKS THAT MIGHT RESULT  
15      FROM THE CONTAMINATION OF THE SITE.  WE WANT TO  
16      QUANTIFY THOSE RISKS SO THAT WE CAN COMPARE THEM  
17      TO THE STANDARDS AND SAFE LEVELS AND MAKE AN  
18      INFORMED EVALUATION OF WHETHER THERE ARE  
19      UNACCEPTABLE PUBLIC HEALTH IMPACTS ASSOCIATED  
20      WITH THE SITE OR NOT.

21              YOU ALSO HEAR US TALK ABOUT BASELINE RISK  
22      ASSESSMENT AS IT'S USED IN SUPERFUNDS.  AND WHAT  
23      A BASELINE RISK ASSESSMENT IS IS THE ESTIMATE OF  
24      RISK TO PUBLIC HEALTH THAT WOULD RESULT IF THE  
25      SITE WERE LEFT UNREMEDiated.  IN OTHER WORDS, IF

            HANWELL REPORTING SERVICE

1 WE DIDN'T DO ANYTHING WITH THE SITE, IF WE DIDN'T  
2 MAKE ANY RESPONSE, THE BASELINE RISK ASSESSMENT  
3 GIVES US AN ESTIMATE OF WHAT THE RISK TO PUBLIC  
4 HEALTH WOULD BE IN THAT UNREMIEDIATED CONDITION.

5 AND HOW DO WE QUANTIFY THOSE LEVELS OF RISK.  
6 WE ESTIMATE EXPOSURE LEVELS BY IDENTIFYING  
7 COMPLETE EXPOSURE PATHWAYS LEADING FROM A SOURCE  
8 OF CONTAMINATION. AND WHEN WE'RE TALKING ABOUT  
9 SUPERFUND SITES THAT SOURCE IS USUALLY THE SITE  
10 ITSELF TO A POINT OF HUMAN OR PUBLIC EXPOSURE.  
11 AND THE NEXT SLIDE I HAVE GIVES A FEW EXAMPLES OF  
12 SOME OF THOSE COMPLETE EXPOSURE PATHWAYS THAT WE  
13 NORMALLY LOOK AT.

14 IF YOU HAVE A SITE, A SOURCE OF  
15 CONTAMINATION, YOU CAN HAVE RELEASES TO GROUND  
16 WATER OF CONTAMINANTS THAT CAN ENTER A WELL AND  
17 THE PUBLIC CAN BE EXPOSED TO DRINKING WATER FROM  
18 THAT CONTAMINATED WELL. THAT'S A COMPLETE  
19 EXPOSURE PATHWAY LEADING FROM THE SITE TO GROUND  
20 WATER TO THE WELL TO THE POINT OF PUBLIC  
21 EXPOSURE. IN A SIMILAR MANNER IF THERE ARE  
22 RELEASES OF GASES OR CONTAMINATED DUST FROM THE  
23 SITE THE WIND COULD BLOW IT TO A POINT WHERE  
24 PEOPLE LIVE OR WHERE PEOPLE NORMALLY ARE AND  
25 PEOPLE COULD INHALE THAT GAS OR INHALE THAT

HANWELL REPORTING SERVICE

1       CONTAMINATED DUST AND CREATE ANOTHER POINT OF  
2       PUBLIC EXPOSURE.   THESE ARE TWO EXAMPLES OF  
3       COMPLETE EXPOSURE PATHWAYS.   AND THERE ARE  
4       NUMEROUS COMPLETE EXPOSURE PATHWAYS OTHER THAN  
5       THESE.   I MEAN WE TRY TO LOOK AT ALL OF THEM WHEN  
6       WE EVALUATE THE RISK ASSOCIATED WITH A SUPERFUND  
7       SITE.

8               MS. BROWN:   SUCH AS BURNING BATTERY  
9       CASINGS.

10              MR. HAYES:   POSSIBLY.   IF THERE WERE  
11       WIND BLOWING TOWARD A HOUSE AND THERE WAS  
12       CONTAMINANTS CREATED YOU COULD BE EXPOSED BY THAT  
13       ROUTE.   THAT'S RIGHT.   THESE ARE THE PRINCIPAL  
14       ROUTES OF HUMAN EXPOSURE.   YOU HAVE INHALATION,  
15       WHICH IS THE BREATHING OF DUST OR VAPORS,  
16       INGESTION WHICH IS YOU COULD DRINK CONTAMINATED  
17       WATER OR GET CONTAMINATED SOIL IN YOUR MOUTH.   IN  
18       ADDITION, SOMETIMES AT SITES THAT ARE NEAR RIVERS  
19       OR STREAMS AND THE CONTAMINATION GETS IN THOSE  
20       RIVERS OR STREAMS WE LOOK AT THE POSSIBILITY OF  
21       CONTAMINATED FISH AND PEOPLE EATING THE FISH.   SO  
22       THERE'S LOTS OF DIFFERENT WAYS BY WHICH INGESTION  
23       CAN OCCUR.   DERMAL ABSORPTION IS ONE THAT YOU  
24       DON'T HEAR ABOUT A LOT.   THERE ARE A LOT OF  
25       CONTAMINANTS THAT CAN ACTUALLY MOVE THROUGH YOUR

              HANWELL REPORTING SERVICE

1 SKIN RELATIVELY EASILY. AND CREATE EXPOSURE IN  
2 THAT MANNER.

3 AND I HAVE A LITTLE SLIDE ABOUT EACH ONE OF  
4 THOSE REAL QUICK. INGESTION OCCURS THROUGH  
5 EATING CONTAMINATED FOOD OR DRINKING CONTAMINATED  
6 WATER. INCIDENTAL OR ACCIDENTAL INGESTION OF  
7 CONTAMINATED SOIL. IN OTHER WORDS, IF SOMEBODY  
8 GOES ON THE SITE BEFORE IT'S CLEANED UP THEY  
9 MIGHT GET SOIL ON THEIR HANDS, PUT THEIR HANDS IN  
10 THEIR MOUTH. THINGS LIKE THAT. INCIDENTAL OR  
11 ACCIDENTAL INGESTION OF CONTAMINATED WATER DURING  
12 SWIMMING OR BOATING OR OTHER RECREATIONAL  
13 ACTIVITIES. AGAIN, IF THE SITE IS NEAR A STREAM  
14 OR RIVER OR LAKE AND THE WATER BECOMES  
15 CONTAMINATED AND IF PEOPLE ARE SWIMMING, BOATING,  
16 WHATEVER IN THAT WATER THEY MIGHT GET A LITTLE IN  
17 THEIR MOUTHS AND SWALLOW IT ACCIDENTALLY.

18 INHALATION AS I SAID OCCURS THROUGH BREATHING OF  
19 TOXIC VAPORS, GASES THAT MIGHT BE RELEASED FROM  
20 THE SITE OR IF YOU HAVE CONTAMINATED DUST THAT'S  
21 BLOWN FROM THE SITE YOU CAN BREATHE IN THE  
22 CONTAMINATED DUST AS WELL.

23 AND DERMAL ABSORPTION I THINK IS  
24 INTERESTING. AS I SAID, IT OCCURS WHEN  
25 CONTAMINANTS ARE ABSORBED DIRECTLY THROUGH THE

HANWELL REPORTING SERVICE

1 SKIN. YOUR SKIN IS A GOOD BARRIER AGAINST WATER  
2 ITSELF AND AGAINST BACTERIA, INORGANIC  
3 CONTAMINANTS, HEAVY METALS AS SOME OF THE THINGS  
4 AT THIS SITE. AND ANYTHING THAT'S ATTACHED TO OR  
5 ABSORBED THROUGH SOILS, CONTAMINATED SOILS. NOW  
6 YOUR SKIN IS A LESS EFFECTIVE BARRIER AGAINST  
7 CERTAIN ORGANIC CONTAMINANTS. BENZENE IS A GOOD  
8 EXAMPLE. WE DIDN'T HAVE BENZENE AT THIS SITE.  
9 BUT AS YOU KNOW IF YOU GO FILL UP YOUR CAR WITH  
10 GAS THERE ARE WARNING SIGNS ON THE PUMP SAYING  
11 DON'T GET THE GASOLINE ON YOUR HANDS. AVOID  
12 CONTACT WITH SKIN. THAT'S BECAUSE SOME OF THE  
13 CONTAMINANTS LIKE BENZENE IN GASOLINE CAN BE  
14 ABSORBED THROUGH YOUR SKIN.

15 WHEN WE FIND OUT WHAT CONTAMINANTS ARE  
16 PRESENT ON THIS SITE THEN WE HAVE TO ASSESS THE  
17 TOXICITY OF THOSE CONTAMINANTS. AND WE GENERALLY  
18 LOOK AT TWO DIFFERENT EFFECTS. WE LOOK AT  
19 CARCINOGENIC EFFECTS OR NON CARCINOGENIC EFFECTS.  
20 CARCINOGENS ARE CONTAMINANTS WHICH ARE KNOWN TO  
21 CAUSE OR SUSPECTED OF CAUSING THE DEVELOPMENT OF  
22 CANCER.

23 MANY CONTAMINANTS ARE NOT CONSIDERED TO BE  
24 CARCINOGENIC BUT HAVE OTHER ADVERSE HEALTH  
25 IMPACTS. THEY MAY HAVE TOXIC EFFECTS ON SPECIFIC

HANWELL REPORTING SERVICE

1       ORGANS BUT DON'T LEAD TO THE DEVELOPMENT OF  
2       CANCER.   AND THERE ARE CONTAMINANTS WHICH HAVE  
3       BOTH, CARCINOGENIC AND NON CARCINOGENIC EFFECTS.  
4       WHEN WE DO TOXICITY ASSESSMENTS FOR CARCINOGENS  
5       WE OPERATE UNDER A FAIRLY CONSERVATIVE  
6       ASSUMPTION.   AND THAT ASSUMPTION IS THAT ANY  
7       EXPOSURE TO A CARCINOGENIC CONTAMINANT, NO MATTER  
8       HOW SMALL, CARRIES WITH IT A PROPORTIONAL LEVEL  
9       OF RISK.   IN OTHER WORDS, THERE IS NO COMPLETELY  
10      RISK FREE LEVEL OF EXPOSURE TO A CARCINOGEN.   ANY  
11      EXPOSURE AT EVEN A VERY LOW RATE OR EVEN A ONE  
12      TIME EXPOSURE CARRIES WITH IT A CERTAIN RISK.  
13      NOW, THE IMPORTANT THING TO REMEMBER FROM THAT IS  
14      NOT THAT ANY EXPOSURE CARRIES SOME RISK, BUT THAT  
15      THE RISK IS PROPORTIONAL TO THE EXPOSURE.   IF THE  
16      EXPOSURE IS LOW OR IF IT'S A ONE TIME EVENT, THEN  
17      YOUR RISK IS VERY VERY LOW.   WE TRY TO CONTROL  
18      RISKS ASSOCIATED WITH SUPERFUND SITES TO VERY LOW  
19      LEVELS.   E.P.A. IS REQUIRED TO REDUCE THE RISKS  
20      ASSOCIATED WITH EXPOSURE TO CARCINOGENS  
21      ASSOCIATED WITH SITES TO LESS THAN 1 TIMES 10 TO  
22      THE MINUS 4.   IN OTHER WORDS, THAT'S 1 IN 10,000.  
23      WHAT THAT MEANS IS WE TRY TO CONTROL EXPOSURE AT  
24      THE SITE SO THAT ANY PERSON WHO MAY BE EXPOSED  
25      UNDER THE REMEDIATED SITE CONDITIONS HAS NO MORE

HANWELL REPORTING SERVICE

1        THAN A 1 IN 10,000 CHANCE OF CONTRACTING OR  
2        DEVELOPING CANCER AS A RESULT.    AND WE USE VERY  
3        CONSERVATIVE EVALUATION TECHNIQUES TO COME UP  
4        WITH THAT ESTIMATE.    SO THAT ESTIMATE IS PROBABLY  
5        A HIGH ESTIMATE.    IN FACT, THE RISK ASSOCIATED  
6        WITH EXPOSURE TO THE SITE ONCE IT'S REMEDIATED IN  
7        ALL LIKELIHOOD IS VERY MUCH LOWER.

8            FOR THE PALMETTO SITE THIS MEANS THAT UNDER  
9        THE MOST STRINGENT EXPOSURE SCENARIO, WHICH I'LL  
10       GET TO IN A SECOND, HEAT WOULD BE RESIDENTS  
11       LIVING ON THE SITE FOR THEIR ENTIRE LIVES OF 70  
12       YEARS, THOSE RESIDENTS SHOULD NOT HAVE A GREATER  
13       THAN A 1 IN 10,000 CHANCE OF DEVELOPING CANCER  
14       DUE TO EXPOSURE.

15           WHEN WE ASSESS THE TOXICITY OF NON  
16       CARCINOGENS THERE'S A LITTLE BIT DIFFERENT WAY OF  
17       LOOKING AT THEM.    AT LOW LEVELS OF EXPOSURE IT IS  
18       ASSUMED THAT THERE ARE NO ADVERSE IMPACTS TO  
19       HUMAN HEALTH.    IN OTHER WORDS, THERE IS A SAFE  
20       EXPOSURE LEVEL THAT YOU CAN REPEATEDLY EXPERIENCE  
21       WITHOUT ANY ADVERSE HEALTH IMPACT.    AND THAT GETS  
22       BACK TO THE QUESTION ABOUT ARSENIC.    IT IS TRUE  
23       THAT AT THOSE LOW LEVELS YOU COULD HAVE CONSTANT  
24       EXPOSURE TO DRINKING WATER AND NOT EXPERIENCE ANY  
25       ADVERSE HEALTH EFFECTS.    THE DRINKING WATER

          HANWELL REPORTING SERVICE

1 STANDARD OF 50 PARTS PER BILLION IS SET AT A  
2 LEVEL WHICH IS PROTECTIVE AND ASSUMES THAT YOU'RE  
3 EXPOSED TO THAT CONSTANTLY. AND THAT THERE WOULD  
4 BE NO ADVERSE HEALTH EFFECT AS A RESULT.

5 AT SUPERFUND SITES WE'RE REQUIRED TO REDUCE  
6 NON CARCINOGENIC RISKS TO A LEVEL SUCH THAT THE  
7 HAZARD INDEX IS LESS THAN ONE. THE HAZARD INDEX  
8 IS JUST A FANCY TERM FOR SAYING WE LOOK AT THE  
9 RATIO OF THE EXPOSURE LEVEL THAT PEOPLE ARE  
10 EXPERIENCING TO THE SAFE LEVEL. IF THAT RATIO IS  
11 GREATER THAN ONE THEN OBVIOUSLY YOUR EXPOSURE IS  
12 GREATER THAN THE SAFE LEVEL AND WE WANT TO  
13 CONTROL THAT EXPOSURE TO GET IT DOWN BELOW ONE.

14 OKAY. WE LOOKED AT FOUR PRIMARY EXPOSURE  
15 PATHWAYS AT THE PALMETTO SITE. WE LOOKED AT A  
16 TRESPASSER SCENARIO. THAT'S THE CURRENT SITE  
17 CONDITIONS. CURRENT SITE CONDITIONS, THERE'S  
18 NOBODY LIVING ON THE SITE. THE PRIMARY ROUTE OF  
19 EXPOSURE OR THE MOST STRINGENT ROUTE OF EXPOSURE  
20 WOULD BE A TRESPASSER GOING ONTO THE SITE IN AN  
21 UNCONTROLLED MANNER REPEATEDLY.

22 BUT WE ALSO WANT TO MAKE SURE THAT THE SITE  
23 IS CLEANED UP SO THAT THE SITE IS SAFE FOR  
24 POTENTIAL FUTURE USES AS WELL. SO WE ALSO LOOKED  
25 AT EXPOSURE SCENARIOS FOR RESIDENTS, FOR CHILDREN

HANWELL REPORTING SERVICE



1       AND ADULTS.   THE YOUTH RESIDENT EXPOSURE SCENARIO  
2       IS KIND OF A SPECIAL ONE AND I'LL TALK ABOUT THAT  
3       A LITTLE MORE.   USUALLY THE GUIDING EXPOSURE  
4       SCENARIOS FOR SETTING THE CLEAN UP LEVELS AT  
5       THESE SITES ARE BASED ON USING THE SITE FOR  
6       RESIDENTIAL PURPOSES IN THE FUTURE.   AND VERY  
7       AFTER THE CHILD RESIDENT BECAUSE CHILDREN ARE  
8       OFTEN MORE SUSCEPTIBLE TO TOXIC EFFECTS.   THE  
9       CHILD RESIDENT EXPOSURE SCENARIO IS VERY OFTEN  
10      THE ONE THAT GUIDES THE REMEDIATION AND SETS THE  
11      CLEAN UP GOALS.   AND THAT IN FACT WAS THE CASE AT  
12      THIS SITE.

13               MS. BROWN:   GOING BACK TO YOUR  
14      TRESPASSER, IS IT POSSIBLE THAT THE CONTAMINATION  
15      THAT'S DOWN THERE NOW THAT PEOPLE DRIVING THEIR  
16      CAR ON THAT TARMAC THERE FOR THE PLACE THERE,  
17      EDMOND'S, GOING IN THERE AND COMING OUT, WOULD  
18      PICK UP CONTAMINATION?

19               MR. HAYES:   I'M NOT SURE WHERE YOU  
20      MEAN.   BUT IT IS POSSIBLE THAT PEOPLE NEAR THE  
21      SITE MIGHT EXPERIENCE SOME EXPOSURE.   BUT IT'S  
22      UNLIKELY --

23               MS. BROWN:   I'M TALKING ABOUT GOING ON  
24      THE TARMAC, WALKING ON THE TARMAC, DRIVING CARS  
25      ON THE TARMAC, WOULD THEY GET EXPOSED TO THE LEAD

              HANWELL REPORTING SERVICE

1       AND THE OTHER --

2                   MR. HAYES:   THE TARMAC ON THE SITE?

3                   MS. BROWN:   YES.

4                   MR. HAYES:   YES.   THAT'S PART OF THE  
5   TRESPASSER EXPOSURE SCENARIO.   AND THE  
6   ASSUMPTIONS THAT GOES INTO THE TRESPASSER  
7   EXPOSURE SCENARIO ARE A LITTLE BIT MORE  
8   CONSERVATIVE THAN SOMEONE WHO MIGHT JUST DRIVE  
9   ONTO THE TARMAC AND WALK AROUND ON THE PAVED  
10  AREA.   IT ASSUMES THAT PEOPLE ARE REPEATEDLY --

11                  MS. BROWN:   WELL, THEY COME OUT ON  
12  THAT DIRT, TOO, WHEN THEY WALK OUT THAT GATE.

13                  MR. HAYES:   THAT'S WHAT THE TRESPASSER  
14  SCENARIO LOOKED AT.   IT LOOKS AT PEOPLE  
15  REPEATEDLY GOING ON THE SITE OVER A LONG PERIOD  
16  OF TIME, YEARS AND YEARS AND YEARS.

17                  MS. BROWN:   THAT'S BEEN HAPPENING DOWN  
18  THERE.

19                  MR. HAYES:   THAT'S EXACTLY WHAT THE  
20  TRESPASSER EXPOSURE PATHWAY LOOKS AT.   BUT AS  
21  I'LL TALK ABOUT A LITTLE BIT MORE, THE RISK  
22  ASSOCIATED WITH THAT EXPOSURE SCENARIO IS VERY  
23  LOW AND WITHIN WHAT WE CONSIDER TO BE ACCEPTABLE  
24  OR SAFE LIMITS.   THE ONLY EXPOSURE SCENARIO  
25  THAT'S CREATED ANY UNACCEPTABLE RISK WAS THE

                  HANWELL REPORTING SERVICE

1 CHILD RESIDENT EXPOSURE SCENARIO.

2 MS. ANDERSON: LILLIE ANDERSON. I'VE  
3 WONDERED FROM THE BEGINNING WHAT EFFECT IF ANY  
4 DID IT HAVE ON THE ROAD ITSELF ADJACENT TO WHERE  
5 PEOPLE DRIVE?

6 MS. BROWN: THE MAIN ROAD.

7 MR. HAYES: I DON'T KNOW TO BE HONEST  
8 WITH YOU.

9 MS. ANDERSON: IT SEEMS LIKE THAT  
10 SHOULD BE LOOKED AT.

11 MR. ROGERS: THERE WERE SAMPLES OUT IN  
12 THE ROADSIDE DITCH THAT INDICATE THAT THERE  
13 WASN'T ANY SIGNIFICANT CONTAMINATION. WE DID  
14 HAVE A HIT WHICH WE COULDN'T REPRODUCE.

15 MS. ANDERSON: BECAUSE AS THEY HAULED  
16 THEY SPILLED AS THEY WENT ALONG ALL THE WAY.

17 MS. BROWN: THE TRUCKS SPILLED THE  
18 CASINGS, THE BATTERY ACID. IN OTHER WORDS, THEY  
19 WERE NOT COVERED AND ALL THAT WAS FLYING ALONG  
20 THE ROAD. ALL THAT WAS REPORTED TO DHEC.

21 MS. ANDERSON: THEY WAS SPILLING ALL  
22 ALONG THERE.

23 MS. BROWN: IT WASN'T JUST COMING FROM  
24 321. IT WAS 21 COMING IN.

25 MR. ROGERS: IN RELATIVE TERMS THAT  
HANWELL REPORTING SERVICE

1        WOULD BE A VERY SMALL AMOUNT.    THAT ROAD GETS  
2        SCRAPED AND DIFFERENT THINGS OCCUR TO IT SUCH  
3        THAT THERE WOULDN'T HAVE BEEN NOTICEABLE  
4        ACCUMULATION THAT WOULD HAVE CAUSED THAT KIND OF  
5        EXPOSURE.

6                    MR. HAYES:    OKAY.    WE'LL COME BACK TO  
7        THOSE QUESTIONS AND THOSE ARE GOOD QUESTIONS.    I  
8        DON'T MEAN TO NOT ADDRESS THEM OR ANSWER THEM TO  
9        YOUR SATISFACTION.    WE CAN COME BACK TO THAT  
10       QUESTION.

11                   MS. BROWN:    YOU SAID TO ASK QUESTIONS.  
12       THAT'S WHAT WE'RE DOING.

13                   MR. HAYES:    GOOD.    I WANT TO GO  
14       THROUGH THE TRESPASSER AND YOUTH RESIDENT BECAUSE  
15       THEY'RE SOMEWHAT SPECIAL CASES.    IN LOOKING AT  
16       PATH SIZE AND LOOKING AT EXPOSURE SCENARIOS  
17       ASSOCIATED WITH THE SITE IN THE PAST IT'S  
18       E.P.A.'S EXPERIENCE THAT THE MOST RESTRICTIVE OR  
19       THE MOST LIKELY EXPOSURE IS GOING TO OCCUR WITH  
20       NOT A CHILD OR AN ADULT.    YOUNG CHILDREN BELOW  
21       THE AGE OF 6 ARE NOT LIKELY TO BE ON THE SITE  
22       UNSUPERVISED.    ADULTS MAYBE KNOW A LITTLE BIT  
23       BETTER THAN TO PLAY AROUND AN INDUSTRIAL SITE.  
24       THE HIGHEST LEVELS OF EXPOSURE, THE GREATEST  
25       RISKS UNDER A TRESPASSER SCENARIO OCCUR IN WHAT

                 HANWELL REPORTING SERVICE

1 WE WOULD CALL A YOUTH OR TEENAGE YEARS. AND THE  
2 PATHWAYS EVALUATED WITH THAT WERE INCIDENTAL  
3 INGESTION OF SURFACE SOIL AND SEDIMENT, DERMAL  
4 ABSORPTION FROM CONTACT WITH THOSE CONTAMINATED  
5 SOILS AND SEDIMENTS AND INHALATION OF  
6 CONTAMINATED DUST AND SOILS. WE ALSO LOOKED AT  
7 OUR YOUTH RESIDENT BECAUSE AGAIN SOMEONE LIVING  
8 ON THE SITE, A CHILD, IS NOT LIKELY TO ROAM  
9 UNSUPERVISED AND GET INTO THE DITCHES AND CREEKS.  
10 AN ADULT PROBABLY KNOWS BETTER. BUT A YOUTH, A  
11 KID OR A TEENAGER, MAY AT TIMES COME INTO CONTACT  
12 WITH THE SEDIMENTS IN THOSE CREEKS AND DITCHES.  
13 AND SO WE WANTED TO MAKE SURE WE COVERED THAT.  
14 SO WE LOOKED AT A YOUTH RESIDENT SCENARIO WHICH  
15 INVOLVED INCIDENTAL INGESTION OF CONTAMINATED  
16 SEDIMENTS AND DERMAL CONTACT WITH THOSE SEDIMENTS  
17 TO MAKE SURE WE COVERED ALL OUR BASES.

18 MS. BROWN: ONE QUESTION. MR. EARLE  
19 IS HERE TONIGHT AND HIS CHILDREN ACROSS THE  
20 STREET WERE TESTED BY DHEC FOR LEAD WHENEVER THE  
21 BATTERY CASINGS WERE BURNED. IS IT POSSIBLE THAT  
22 THEY NEED TO BE RETESTED NOW BY E.P.A. SINCE THEY  
23 ARE CHILDREN AND YOUNG TEENAGERS?

24 MR. HAYES: WELL, THAT'S A VERY  
25 DIFFICULT QUESTION TO ANSWER. I WOULDN'T WANT TO

HANWELL REPORTING SERVICE

1 SAY THAT IT WOULDN'T DO ANY GOOD TO RETEST THEM.  
2 BUT BASED ON THE EVALUATION AND THE RISK  
3 ASSESSMENT THE ONLY CHILDREN THAT WOULD BE AT ANY  
4 RISK ON THIS SITE WOULD BE IF THEY ACTUALLY LIVED  
5 ON THE SITE EVERY DAY AND WERE EXPOSED AND  
6 PLAYING ON THE SITE EVERY DAY. ANY EXPOSURE LESS  
7 THAN THAT IS NOT LIKELY TO HAVE CREATED AN  
8 UNACCEPTABLE LEVEL OF RISK. SO WHILE I CAN'T SAY  
9 THAT IT WOULDN'T BE OF ANY PURPOSE TO HAVE THOSE  
10 CHILDREN TESTED AGAIN OR TO HAVE ANYBODY WHO'S  
11 BEEN ON THE SITE TESTED AGAIN, ALL I CAN SAY IS  
12 THAT IT WOULD BE VERY UNLIKELY THAT THAT TYPE OF  
13 EXPOSURE WOULD CREATE AN UNACCEPTABLE HEALTH  
14 RISK. THERE IS SOME UNCERTAINTY ASSOCIATED WITH  
15 HOW LEAD EXPOSURE EFFECTS PEOPLE. IT AFFECTS  
16 DIFFERENT PEOPLE IN DIFFERENT WAYS AND AT  
17 DIFFERENT LEVELS. SO A LOWER LEVEL OF EXPOSURE  
18 TO A CHILD WHO WAS VERY SUSCEPTIBLE TO THOSE  
19 KINDS OF EFFECTS IT MIGHT CREATE A PROBLEM. BUT  
20 THE LIKELIHOOD OF THAT IS VERY SMALL. AND AGAIN  
21 I HAVE SOME SLIDES THAT MIGHT TALK ABOUT THAT A  
22 LITTLE BIT MORE AS WE GO ON. AND AGAIN, WE CAN  
23 COME BACK TO IT. BUT AGAIN, THAT'S A VERY GOOD  
24 QUESTION. AND I'M NOT SURE I'M GOING TO BE ABLE  
25 TO SATISFACTORILY ANSWER ALL YOUR QUESTIONS ABOUT

HANWELL REPORTING SERVICE

1 LEAD TOXICITY AND HOW IT MAY AFFECT DIFFERENT  
2 PEOPLE DIFFERENTLY. BECAUSE IT'S NOT SOMETHING  
3 THAT'S EASY TO UNDERSTAND. IT'S NOT EVEN EASY  
4 FOR ME TO UNDERSTAND.

5 MS. BROWN: WELL, WOULDN'T E.P.A. AS  
6 WELL AS THE NEIGHBORS BE SATISFIED IF THEY WERE  
7 TESTED AGAIN TO MAKE SURE THAT THEY WERE NOT?

8 MR. HAYES: WELL, I THINK THAT'S A  
9 POSSIBILITY THAT WE CAN TALK ABOUT. BUT I CAN'T  
10 TELL YOU WHETHER SOMETHING NEEDS TO BE DONE OR  
11 NOT. AND THAT'S SOMETHING WE CAN TAKE BACK WITH  
12 US AND TALK ABOUT WHETHER IT'S SOMETHING THAT  
13 WOULD BE A GOOD IDEA TO DO AS PART OF THE SITE  
14 INVESTIGATION.

15 MS. BROWN: BECAUSE THEY ARE ACROSS  
16 THE ROAD FROM IT.

17 MR. HAYES: THE ADULT RESIDENT PATHWAY  
18 WE LOOKED AT AGAIN A VERY COMPREHENSIVE EXPOSURE  
19 SCENARIO. WE LOOKED AT INGESTION OF CONTAMINATED  
20 SURFACE SOILS AND GROUND WATER. IN OTHER WORDS,  
21 ASSUMING THAT SOMEBODY WOULD BUILD A HOUSE ON THE  
22 SITE, SINK A WELL ON THE SITE AND DRINK THE WATER  
23 FROM THAT WELL. WE ADDED DERMAL ABSORPTION FROM  
24 CONTACT WITH THOSE CONTAMINATED SURFACE SOILS AND  
25 INHALATION NOT ONLY FROM CONTAMINATED DUST AND

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1 SOIL BUT FROM THE VOLATILE CONTAMINANTS THAT  
2 MIGHT BE PRESENT IN THE GROUND WATER THAT COULD  
3 BE RELEASED WHILE SOMEBODY IS TAKING A SHOWER AND  
4 INHALED WHILE YOU'RE TAKING A SHOWER. SO WE  
5 TRIED TO BE VERY COMPREHENSIVE IN LOOKING AT ALL  
6 THE VARIOUS EXPOSURE PATHWAYS.

7 AND THE EXPOSURE PATHWAYS FOR THE CHILD ARE  
8 JUST THE SAME BUT THE DIFFERENCE IN HOW WE  
9 EVALUATED THE RISK ASSOCIATED WITH A CHILD IS  
10 THAT A CHILD DRINKS LESS WATER. A CHILD HAS A  
11 LOWER BODY WEIGHT. AND SO IS LIKELY TO BE MORE  
12 SUSCEPTIBLE. AND THE TOXIC END POINTS OR THE  
13 LEVEL AT WHICH TOXIC EFFECTS ARE EXPERIENCED BY A  
14 CHILD GENERALLY TEND TO BE LOWER FOR MOST  
15 CONTAMINANTS. SO EVEN THOUGH THE PATHWAYS  
16 EVALUATED ARE THE SAME, A LOT OF THE NUMBERS THAT  
17 WENT INTO THOSE CALCULATIONS FOR A CHILD ARE  
18 DIFFERENT THAN THEY ARE FOR AN ADULT.

19 ALL RIGHT. A LOT OF CONTAMINANTS WERE FOUND  
20 IN THE SAMPLES AT PALMETTO. THERE WERE FOUR  
21 ORGANICS FOUND IN EITHER SURFACE SOILS OR GROUND  
22 WATER, ETC. YVONNE ALREADY MENTIONED SHE GOT.  
23 BUT SAMPLES WERE FOUND TO HAVE HAD SOME OF THESE  
24 OTHER CONTAMINANTS IN THEM. ALSO, A FAIRLY LARGE  
25 NUMBER OF METALS WERE FOUND. THE THING TO

HANWELL REPORTING SERVICE



1 REMEMBER ABOUT THIS IS THAT WHEN WE RAN THESE  
2 CONTAMINANTS THROUGH THE RISK ASSESSMENT NONE OF  
3 THEM CREATED ANY THREAT TO HEALTH OR ANY  
4 UNACCEPTABLE RISK WITH ONE EXCEPTION. AND THAT  
5 EXCEPTION AS YOU MIGHT EXPECT WAS LEAD. EVEN IN  
6 THE GROUND WATER AS YVONNE POINTED OUT, WE DIDN'T  
7 FIND ANY LEAD ABOVE DRINKING WATER STANDARDS.  
8 THERE WAS ONE SAMPLE THAT WAS A LITTLE BIT HIGH  
9 BUT WHEN WE WENT BACK AND RESAMPLED THAT WELL A  
10 COUPLE MORE TIMES WE DIDN'T FIND ANYTHING. BUT  
11 THE LEAD ASSOCIATED WITH THE SURFACE SOILS  
12 CREATED AN UNACCEPTABLE LEVEL OF RISK FOR THE  
13 CHILD RESIDENT EXPOSURE SCENARIO. SO WE'LL TALK  
14 ABOUT THAT A LITTLE BIT.

15 OKAY. THE PRELIMINARY CONCLUSIONS FROM THE  
16 RISK ASSESSMENT WERE THAT UNDER CURRENT EXPOSURE  
17 CONDITIONS UNDER THE TRESPASSER SITUATION THERE  
18 IS NO UNACCEPTABLE LEVEL OF RISK. THE  
19 UNACCEPTABLE RISK ASSOCIATED WITH POTENTIAL  
20 FUTURE EXPOSURE SCENARIOS IS DUE EXCLUSIVELY TO  
21 CONTAMINATED SOILS. AND THE RISK LEVELS ARE  
22 ASSOCIATED WITH POTENTIAL EXPOSURE TO LEAD. THE  
23 OTHER CONTAMINANTS AND THE OTHER MEDIA DID NOT  
24 CONTRIBUTE SIGNIFICANTLY TO ANY UNACCEPTABLE  
25 RISK.

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1           THIS IS THE SUMMARY OF THE HEALTH EFFECTS OF  
2   LEAD.   AND THERE IS A HANDOUT ON THE BACK TABLE,  
3   A FACT SHEET, ABOUT THE HEALTH EFFECTS.   IT GOES  
4   INTO A LITTLE BIT MORE DETAIL.   EXPOSURE TO HIGH  
5   LEVELS OF LEAD CAN CAUSE SEVERE BRAIN DAMAGE AND  
6   KIDNEY DAMAGE.   CERTAINLY NOTHING LIKE THE LEVELS  
7   OF EXPOSURE WE HAVE AT THIS SITE.   THAT WOULD BE  
8   PERHAPS INDUSTRIAL EXPOSURE IN AN UNCONTROLLED  
9   SITUATION.   CERTAINLY THOSE KINDS OF LEVELS ARE  
10   NOTHING LIKE WHAT WE WOULD FIND AT THIS SITE.  
11   THERE IS SOME EVIDENCE TO SUGGEST THAT LOWER  
12   LEVELS OF EXPOSURE MAY CAUSE INCREASES IN BLOOD  
13   PRESSURE IN MEN ALTHOUGH I THINK THERE'S A LOT OF  
14   THINGS THAT CAUSE INCREASED BLOOD PRESSURE IN  
15   MIDDLE AGED MEN.   I KNOW THAT I HAVE THAT  
16   PROBLEM.   VERY HIGH LEVELS MAY ALSO EFFECT MALE  
17   REPRODUCTIVE SYTEMS.   EXPOSURES OF PREGNANT WOMEN  
18   CAN RESULT IN PREMATURE BIRTH, LOW BIRTH WEIGHT  
19   OR EVEN MISCARRIAGE.   AND THIS IS THE IMPORTANT  
20   ONE, THIS LAST ONE.   LEAD EXPOSURES IN INFANTS  
21   AND YOUNG CHILDREN CAN SHOW DECREASED IQ SCORES,  
22   RETARD PHYSICAL GROWTH AND CAUSE HEARING  
23   PROBLEMS.

24           NOW, LEAD IS A BAD ACTOR.   THERE IS NO  
25   QUESTION ABOUT IT.   AND THERE'S BEEN A LOT OF

HANWELL REPORTING SERVICE

1 RESEARCH ON THE EFFECTS OF LEAD. THAT'S ONE  
2 REASON FOR THOSE OF YOU WHO ARE OLD ENOUGH TO  
3 REMEMBER WHY LEAD GASOLINE WAS PHASED OUT, WHY  
4 LEAD PAINTS ARE NO LONGER USED. ALL THAT WAS AS  
5 ATTEMPT TO REDUCE THE PUBLIC'S EXPOSURE TO LEAD  
6 BECAUSE OF THE ADVERSE AND IN SOME CASES SEVERE  
7 HEALTH EFFECTS OF LEAD. SO WE DON'T WANT TO  
8 UNDERESTIMATE THE POTENTIAL HEALTH EFFECTS OF  
9 LEAD. IT IS A REAL PROBLEM.

10 OKAY. THIS IS -- THE WAY THAT WE EVALUATE  
11 THE EFFECTS OF LEAD ON THE PUBLIC OR ON HUMAN  
12 HEALTH IS BY MEANS OF THIS LEAD UPTAKE BIOKINETIC  
13 MODEL. AND THAT'S JUST A FANCY TERM FOR A  
14 COMPUTER PROGRAM THAT GIVEN THE EXPOSURE LEVELS  
15 OF LEAD AT A SITE PREDICTS THE AVERAGE BLOOD  
16 CONCENTRATIONS OF LEAD IN CHILDREN AGE 0 TO 6  
17 YEARS.

18 THE RESEARCH THAT HAS BEEN DONE REGARDING  
19 TOXIC EFFECTS OF LEAD HAS SHOWN THAT THE  
20 NEUROTOXIC EFFECTS, THOSE LOW IQ SCORES, OTHER  
21 CENTRAL NERVOUS SYSTEM EFFECTS, MAY OCCUR AT  
22 BLOOD LEAD LEVELS AS LOW AS TEN MICROGRAMS PER  
23 DECALITER. THIS IS JUST A MEASUREMENT TOOL THAT  
24 THE MEDICAL PROFESSION USES TO MEASURE  
25 CONCENTRATIONS IN BLOOD. THE NUMBER 10 IS WHAT

HANWELL REPORTING SERVICE

1 TO REMEMBER. AND E.P.A.'S GOAL IS TO ENSURE THAT  
2 BASED ON THIS BIOKINETIC MODEL, BASED ON THIS  
3 COMPUTER PROGRAM, THAT 95 PERCENT OF EXPOSED  
4 CHILDREN AT THE SITE HAVE BLOOD LEAD LEVELS LESS  
5 THAN THIS RELATIVELY SAFE LEVEL OF 10 MICROGRAMS  
6 PER DECALITER. SO THE IMPORTANT THING TO TAKE  
7 AWAY FROM THIS SLIDE IS THAT WE WANT TO CONTROL  
8 BLOOD LEAD LEVELS TO BELOW TEN. WE WANT TO MAKE  
9 SURE THAT NO MORE THAN FIVE PERCENT OF THE  
10 EXPOSED POPULATION WOULD BE PREDICTED TO HAVE  
11 LEAD LEVELS ABOVE THAT. AND THAT THIS MODEL IS  
12 USED TO PREDICT THOSE BLOOD CONCENTRATIONS IN  
13 CHILDREN.

14 THIS IS A GRAPH SHOWING THE RESULTS OF THAT  
15 MODEL, OF THAT COMPUTER PROGRAM. NOW, THIS LINE  
16 IS TEN MICROGRAMS PER DECALITER, THE LEVEL AT  
17 WHICH WE WANT TO CONTROL EXPOSURE. WHAT THIS  
18 LINE INDICATES IS THE PERCENTAGE OF CHILDREN THAT  
19 WOULD HAVE A GIVEN CONCENTRATION OF LEAD IN THEIR  
20 BLOOD UNDER EXPOSURES TO SITE CONDITIONS. NOW, I  
21 KNOW THIS CAN BE A LITTLE CONFUSING. BUT WHAT  
22 THIS GRAPH MEANS IS THIS PEAK HERE IS THE AVERAGE  
23 BLOOD LEVEL CONCENTRATION OR THE MOST FREQUENT  
24 BLOOD LEVEL CONCENTRATION THAT WOULD RESULT AS AN  
25 EXPOSURE TO THE SITE. AND THAT NUMBER IS ABOUT

HANWELL REPORTING SERVICE

1 5.6 MICROGRAMS PER DECALITER, WHICH IS WELL BELOW  
2 THE 19. WHAT THIS GRAPH ALSO SHOWS IS THAT ABOUT  
3 10.6 PERCENT OF THE CHILDREN WHO ARE EXPOSED AT  
4 THIS SITE WOULD HAVE BLOOD LEAD LEVELS ABOVE THIS  
5 SAFE LEVEL OF 10. AND UNDER E.P.A. GUIDELINES  
6 AND UNDER E.P.A. PROTOCOLS THAT'S CONSIDERED AN  
7 UNACCEPTABLE LEVEL OF RISK. WE WANT TO CONTROL  
8 THAT TO BE LESS THAN 5 PERCENT. SO IN ORDER TO  
9 DO THAT WE HAVE TO REDUCE THE LEAD AT THE SITE.  
10 IN THIS GRAPH WERE SHIFTED BACK THIS WAY SO THAT  
11 LESS OF IT WERE ON THE RIGHT OF THIS LINE OF 10  
12 PERCENT THEN IT MIGHT BE THAT THE PERCENT WOULD  
13 BE 5 PERCENT AND THE SITE WOULD BE OKAY. BUT  
14 SINCE IT IS GREATER THAN 5 PERCENT THAT'S  
15 CONSIDERED AN UNACCEPTABLE LEVEL OF RISK FOR  
16 CHILDREN EXPOSED TO LEAD AT THE SITE AND IT'S THE  
17 BASIS FOR OUR PROPOSAL TO REMEDIATE SURFACE SOILS  
18 AT THE SITE.

19 THE CLEAN UP LEVEL FOR LEAD, WHICH YVONNE  
20 HAS ALREADY MENTIONED, IS PROPOSED AT 400  
21 MILLIGRAMS PER KILOGRAM. THAT'S BASED ON AGENCY  
22 GUIDANCE. THIS IS JUST AN INTERNAL GUIDANCE  
23 DOCUMENT THAT WAS DEVELOPED TO HELP PEOPLE LIKE  
24 YVONNE AND ME CHOOSE THE RIGHT CLEAN UP LEVEL.  
25 AND THAT LEVEL OF 400 MILLIGRAMS PER KILOGRAM IS

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1 DESIGNED TO MEET THE GOAL OF 95 PERCENT BLOOD  
2 LEVELS LESS THAN 10 MICROGRAMS PER DECALITER.  
3 THE CURRENT SOIL LEAD CONCENTRATIONS  
4 AVERAGE 528 MICROGRAMS PER KILOGRAM. SOME OF THE  
5 SAMPLES WERE MUCH HIGHER AS YVONNE SAID. AND  
6 THAT AVERAGE LEVEL IS 32 PERCENT GREATER THAN THE  
7 PROPOSED CLEAN UP LEVEL OF 400 MILLIGRAMS PER  
8 KILOGRAM.

9 THE IMPORTANT THING TO REMEMBER I THINK FROM  
10 LOOKING AT THIS INFORMATION IS THAT EVEN UNDER  
11 CURRENT SITE CONDITIONS A CHILD LIVING ON THE  
12 SITE WOULD NOT BE LIKELY TO HAVE BLOOD LEAD  
13 LEVELS THAT EXCEED THE SAFE LEVEL. BUT A CERTAIN  
14 PERCENTAGE OF CHILDREN MIGHT. AND BECAUSE OF  
15 THAT POSSIBILITY WE WANT TO MAKE SURE THAT WE  
16 REMEDIATE THE SITE SO THAT THAT LIKELIHOOD IS  
17 VERY, VERY SMALL.

18 I'LL TAKE A COUPLE QUICK QUESTIONS. BUT IF  
19 YOU DON'T MIND WE'LL LET YVONNE DO THE REST OF  
20 HER PRESENTATIOON AND THEN ANSWER QUESTIONS IN  
21 GENERAL AT THE END.

22 MR. EARLE: OKAY. MY QUICK QUESTION  
23 IS YOU'RE SAYING ABOUT CHILDREN LIVING ON THE  
24 SITE. HOW MANY FEET WOULD A CHILD HAVE TO LIVE  
25 BEFORE IT'S CONSIDERED LIVING OFF SITE?

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1                   MR. HAYES:   WELL, WHEN WE SAY LIVING  
2   ON SITE WE MEAN THAT IF SOMEBODY BUILT A HOUSE  
3   AND THE CHILD LIVED IN THAT HOUSE AND WAS IN THAT  
4   YARD EVERY DAY COMING AND GOING UNDER NORMAL  
5   CONDITIONS AND THAT INCLUDES AS I SAID DRINKING  
6   WATER FROM A WELL ON THAT SITE.   IT INCLUDES ALL  
7   THE OTHER EXPOSURE PATHWAYS BASICALLY.   THE ONE  
8   THAT REALLY CREATES THE PROBLEM IS THE  
9   CONTAMINATED SOIL.   BUT I THINK THAT A CHILD THAT  
10  DOESN'T LIVE RIGHT ON THE SITE IS NOT GOING TO  
11  EXPERIENCE THE SAME LEVEL OF EXPOSURE AS A CHILD  
12  WHO LIVES SAY ACROSS THE STREET OR NEARBY IF FOR  
13  NO OTHER REASON THAN THE HOUSE ITSELF IS LIKELY  
14  TO HAVE DUST IN IT AND IS CONTAMINATED WITH LEAD  
15  AND IS MORE LIKELY TO HAVE THAT KIND OF PROBLEM  
16  IF IT'S RIGHT ON THE SITE AS OPPOSED TO SOME  
17  DISTANCE AWAY.

18                  MS. BROWN:   YOU'RE TALKING ABOUT THE  
19  DUST.   NORMALLY WE HAVE SOUTHWEST WINDS WHICH  
20  WOULD BLOW TO THE NORTH, NORTHEAST.   BUT HERE  
21  LATELY WE'VE HAD NORTH NORTHEAST WINDS THAT WOULD  
22  BLOW THAT DUST ACROSS INTO THE AREA OF  
23  MR. EARLE'S AND THE OTHER PEOPLE LIVING ACROSS  
24  THE ROAD.   THAT CONTAMINATED DUST WOULD BE BLOWN  
25  INTO THEIR YARD INTO THEIR HOUSE.

                  HANWELL REPORTING SERVICE

1 MR. HAYES: YES.

2 MS. BROWN: THAT'S WHY I ASKED YOU THE  
3 FIRST TIME WOULDN'T IT BE OF INTEREST FOR THE  
4 E.P.A. TO HAVE THOSE CHILDREN RETESTED AND PEOPLE  
5 OVER 65 RETESTED IN THAT AREA?

6 MR. HAYES: WELL, AGAIN, I'LL JUST  
7 REPEAT THAT THAT MAY BE A GOOD IDEA. I DON'T  
8 WANT TO TELL YOU THAT WE'RE GOING TO DO SOMETHING  
9 OR NOT DO SOMETHING WITHOUT GOING BACK AND  
10 THINKING ABOUT IT AND TRYING TO MAKE A DECISION  
11 ABOUT WHAT'S THE BEST THING TO DO. SO IT MAY BE  
12 A GOOD IDEA. AND THAT'S EXACTLY THE KIND OF  
13 THING THAT WE NEED TO DO.

14 MS. BROWN: BECAUSE YOU STOOD THERE  
15 AND STATED THAT WE DO HAVE LEAD CONTAMINATION  
16 THERE.

17 MR. HAYES: BUT THE IMPORTANT THING TO  
18 REMEMBER IS THAT TYPE OF EXPOSURE, WIND BLOWN  
19 EXPOSURE OF DUST, IS GOING TO BE MUCH LESS THAN A  
20 CHILD WHO IS LIVING AND PLAYING ON THE SITE EVERY  
21 DAY FOR THE FIRST SIX YEARS OF ITS LIFE. I THINK  
22 THAT'S AGAIN -- IT HELPS ANSWER YOUR QUESTION.  
23 THIS IS BASED ON EFFECTS FOR CHILDREN 6 YEARS AND  
24 YOUNGER. THAT'S THE CRITICAL EXPOSURE SCENARIO.  
25 I KNOW THAT THINGS ARE A LITTLE BIT DIFFERENT IN

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1 THE COUNTRY THAN THEY ARE IN ATLANTA, BUT I STILL  
2 WOULD THINK THAT A CHILD THAT YOUNG IS NOT LIKELY  
3 TO WANDER ACROSS THE STREET AND OUT OF ITS YARD  
4 AND ONTO AN INDUSTRIAL SITE VERY OFTEN AT LEAST  
5 UNTIL THEIR PARENTS WERE TO FIND OUT ABOUT IT AND  
6 TRY TO REIN THEM IN A LITTLE BIT. BUT THAT'S  
7 DIFFERENT FROM SOMEBODY WHO'S LIVING ON THE SITE  
8 AND A CHILD PLAYING IN THE YARD EVERY DAY. SO IF  
9 THE EXPOSURE ASSOCIATED WITH LIVING ON THE SITE  
10 IS UNACCEPTABLE BUT SOMEWHAT WAS CLOSE TO BEING  
11 ACCEPTABLE, WITHIN FIVE PERCENT OF BEING  
12 ACCEPTABLE, THAN A CHILD LIVING ACROSS THE STREET  
13 THAT YOUNG WHO'S NOT ON THE SITE EVERY DAY IS NOT  
14 LIKELY TO BE EXPERIENCING THE SAME EXPOSURES.

15 MR. EARLE: WELL, MY CONCERN WAS  
16 BECAUSE FROM '83 TO THE TIME THE PLANT CLOSED  
17 THESE PEOPLE OPERATED BETTER THAN TEN HOURS A  
18 DAY. AND WHEN THEY HAD THOSE CONVEYOR BELTS  
19 RUNNING AND WHEN THE WIND WAS BLOWING I'M QUITE  
20 SURE THERE WAS DUST AND THINGS IN THE AIR FOR THE  
21 DURATION THE PLANT WAS OPEN. SO I MEAN WOULDN'T  
22 THAT BE SOMEWHAT DIFFERENT BASED ON THE FINDINGS  
23 OF WHAT YOU FINDING ON THE SITE RIGHT NOW?

24 MR. HAYES: IT WOULD BE DIFFERENT.  
25 AND THE PROBLEM WITH THAT IS AND THERE LIKELY WAS

HANWELL REPORTING SERVICE

1 EXPOSURE OCCURRING AS A RESULT OF THAT. THE  
2 PROBLEM WITH THAT IS WE DON'T HAVE ANY WAY TO TRY  
3 TO MEASURE OR ESTIMATE WHAT THOSE EFFECTS WERE.

4 MR. EARLE: THEN FOR CLARIFICATION THE  
5 POINT I WAS SAYING ABOUT WHAT YOU WERE SAYING  
6 ABOUT AS FAR AS THE GROUND CONTAMINATION NOW  
7 WHICH I CAN UNDERSTAND BUT IT STILL DOES NOT TELL  
8 ME BASICALLY WHAT WAS HAPPENING IN THE TIME '83  
9 LIKE I SAID, WHICH WOULD AFFECT THE CHILD AND  
10 COULD, POSSIBILITY. 6 YEARS OLD. THEN I CAN  
11 LOOK AT IT ON THE OTHER HAND AND SAY WELL, MY  
12 LITTLE DAUGHTER BORN IN 1978 DURING THE TIME THE  
13 SITE WAS IN OPERATION.

14 MR. HAYES: YOU'RE RIGHT. THAT'S A  
15 VERY GOOD POINT. AND THE ONLY THING I CAN TELL  
16 YOU IS EXPOSURE MAY HAVE OCCURRED IN THOSE  
17 PERIODS. AND THERE'S NO WAY FOR US TO MEASURE  
18 THAT NOW OR EVEN TO TRY AND ESTIMATE IT. AND SO  
19 WE'RE LOOKING AT THE SITE AS THE WAY IT IS NOW  
20 AND LEAVING IT UNREMIEDIATED AND ASSESSING THE  
21 RISKS THAT WOULD RESULT. I DON'T THINK -- AND  
22 THIS IS A QUESTION THAT COMES UP AT SITES A LOT.  
23 WHAT ABOUT THE PERIOD WHEN IT WAS IN OPERATION.  
24 WHAT ABOUT THE PERIOD BEFORE. AND UNFORTUNATELY  
25 THERE'S JUST NO REAL WAY FOR US TO ANSWER THOSE

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1 QUESTIONS FOR YOU SINCE THOSE TIMES ARE PAST.  
2 THERE'S NO WAY FOR US TO GATHER THAT EVIDENCE AND  
3 MAKE ASSESSMENTS.

4 MR. EARLE: ONE FINAL QUESTION. YOU  
5 DID MENTION SOMETHING ABOUT THE POSSIBILITY OF  
6 CANCER. WHAT IS THE LIKELIHOOD OF SOMEONE  
7 GETTING CANCER AS FAR AS DURING THAT PARTICULAR  
8 TIME OR DO THEY HAVE TO BE EXPOSED SAY FOR A  
9 PERIOD OF TEN YEARS OR DO YOU KNOW ANYTHING ABOUT  
10 THAT?

11 MR. HAYES: WELL, THERE IS NO CLEAR  
12 EVIDENCE THAT LEAD IS A CARCINOGEN. LEAD HAS  
13 VERY SERIOUS EFFECTS IN OTHER WAYS. CENTRAL  
14 NERVOUS SYSTEM EFFECTS AND SOME OF THE OTHERS  
15 THAT I MENTIONED. THERE IS NO CLEAR EVIDENCE  
16 THAT LEAD IS A CARCINOGEN. SO I GUESS THE ANSWER  
17 TO YOUR QUESTION IS WE WOULD NOT EXPECT TO SEE  
18 CANCER AS A RESULT OF LEAD EXPOSURE. NOW, THE  
19 ONLY OTHER CONTAMINANT THAT WAS MENTIONED IN THE  
20 RISK ASSESSMENT OR WAS CARRIED THROUGH THE RISK  
21 ASSESSMENT THAT HAD ANY SIGNIFICANT LEVELS AND  
22 MIGHT BE A CARCINOGEN IS THE 1,2-DICHLOROETHANE.  
23 AND IT WAS FOUND AT SUCH LOW LEVELS THAT THE RISK  
24 ASSOCIATED WITH THAT IS INFINITESIMALLY SMALL.  
25 AND I DON'T THINK THAT YOU WOULD EXPERIENCE ANY

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1       SIGNIFICANT RISK FROM A LIFE TIME OF EXPOSURE TO  
2       SOILS AT THOSE LOW LEVELS.

3               MS. HICKS:   WHAT DO YOU CONSIDER A  
4       NORMAL LIFE TIME?

5               MR. HAYES:   WE USE 70 YEARS.   IF I  
6       MAKE IT THAT LONG I WILL BE GREAT.

7               MR. EARLE:   THE REASON I ASK THAT  
8       QUESTION I'M NOT SAYING IT WOULDN'T HAVE ANYTHING  
9       TO DO WITH THAT BUT BY YOU HAVING CANCER IN YOUR  
10      PRESENTATION AND THEN I CAN LOOK AT THE SITUATION  
11      FROM MY WIFE WHO HAS IT IN 1988 AND I ASK WELL IS  
12      THAT A POSSIBILITY OR IS IT NOT A POSSIBILITY?

13              MR. HAYES:   I SEE WHAT YOU MEAN.   LET  
14      ME ANSWER THAT TWO WAYS.   THE FIRST THING IS WE  
15      LOOKED AT THIS SITE UNDER VERY STRINGENT AND  
16      CONSERVATIVE EXPOSURE SCENARIOS.   WE DIDN'T FIND  
17      ANY CARCINOGENIC RISKS UNDER THE CURRENT  
18      CONDITIONS.   NOW, I KNOW THAT DOESN'T ADDRESS  
19      WHAT MIGHT HAVE GONE ON IN THE PAST.   SO FOR WHAT  
20      THAT'S WORTH.   THE OTHER THING THAT I'LL SAY IS  
21      THAT SINCE WE DIDN'T FIND ANY CARCINOGENIC RISKS  
22      AT THIS SITE IT MIGHT HAVE BEEN BETTER IF I HAD  
23      NOT TALKED ABOUT CARCINOGENIC RISKS AND RAISED  
24      THOSE QUESTIONS.   ON THE OTHER HAND WE TRY TO BE  
25      AS COMPLETE AS POSSIBLE WHEN WE TALK ABOUT RISKS

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1        ASSOCIATED WITH THE SITE AND TO BE HONEST THAT'S  
2        JUST PART OF THE SHOW. IT'S PART OF THE REGULAR  
3        PRESENTATION I MAKE TO TALK ABOUT CARCINOGENIC  
4        RISKS. SO MAYBE IN THE FUTURE WHEN THERE ARE NO  
5        CARCINOGENIC RISKS ASSOCIATED WITH THE SITE I MAY  
6        PARE THAT PART OF THE TALK BACK A LITTLE BIT. SO  
7        IF YOU DON'T MIND IF YOU HAVE ANY OTHER QUESTIONS  
8        WE'RE GOING TO HAVE A QUESTION AND ANSWER SESSION  
9        AT THE END AFTER YVONNE DOES THE REST OF HER  
10       PRESENTATION. AND I'LL STILL BE AROUND. THANK  
11       YOU.

12                MS. JONES:    OKAY. AS MR. HAYES STATED  
13        EARLIER 400 MILLIGRAMS PER KILOGRAM WHICH IS THE  
14        SAME AS 400 PARTS PER MILLION AND I'LL USE PARTS  
15        PER MILLION BUT THEY'RE THE SAME THING, JUST  
16        ANOTHER TERM ANOTHER PERSON. IS THE REMEDIATION  
17        LEVEL FOR THE SOIL, SURFACE SOIL AT THE SITE.  
18        BASED ON THIS DETERMINATION E.P.A. BASICALLY WENT  
19        THROUGH AND LOOKED AT THE RESULTS OF THE DATA  
20        PRESENTED TO US OR GATHERED FROM EACH OF THESE  
21        SOIL SAMPLES AND DETERMINED OR TRIED TO DETERMINE  
22        THE EXTENT OF LEAD CONTAMINATION AT THE SITE.  
23        BASED ON THE DATA WE APPROXIMATED THAT PROBABLY  
24        OR WE AT LEAST HAVE 1100 CUBIC YARDS OF  
25        CONTAMINATED SOIL AT THE SITE THAT NEEDS TO BE

              HANWELL REPORTING SERVICE

1 REMEDIATED DOWN TO THE SAFE LEVEL OF 400 PARTS  
2 PER MILLION.

3 MS. BROWN: THE SHADED AREA IS WHAT  
4 YOU'RE TALKING ABOUT NOW?

5 MS. JONES: CORRECT.

6 MS. BROWN: BOTH SHADED AREAS?

7 MS. JONES: CORRECT.

8 MS. BROWN: ALL RIGHT. PART OF THAT  
9 IS THAT ON TOP OF THE TARMAC THERE ON THAT LOT?

10 MS. JONES: YES, MA'AM.

11 MS. BROWN: WAS IT TESTED UNDER THE  
12 TARMAC DOWN AT THAT AREA?

13 MS. JONES: WELL, WE TESTED AT -- IF  
14 YOU CAN ACTUALLY TELL IT, PR-04, PR-03 AND PR-02.

15 MS. BROWN: BUT THAT WAS JUST ON THE  
16 TARMAC, WASN'T IT?

17 MS. JONES: CORRECT. WELL, BASICALLY  
18 WHAT WE DID WAS WE BORED DOWN THROUGH THE  
19 ASPHALT.

20 MS. BROWN: YOU DID BORE DOWN THROUGH  
21 THAT.

22 MS. JONES: CORRECT. THE LEVEL THAT  
23 YOU KNOW JUST THAT I CAN REMEMBER FOR THIS  
24 PARTICULAR ONE HERE WAS 675. THE LEVEL TAKEN AT  
25 THE SOIL SAMPLE LOCATION NUMBER 8 WHICH REALLY

HANWELL REPORTING SERVICE

1 LOOKS LIKE IT'S ON THE TARMAC BUT ACTUALLY IT'S  
2 OFF. THAT PARTICULAR RESULT WAS 425 OR 475.

3 MS. BROWN: IN OTHER WORDS, 400 PARTS  
4 PER BILLION IS CONSIDERED SAFE?

5 MS. JONES: PARTS PER MILLION,  
6 CORRECT.

7 MS. BROWN: IS CONSIDERED SAFE?

8 MS. JONES: CORRECT.

9 MS. BROWN: AND YOU'RE SAYING THAT  
10 OVER THERE ON THE RIGHT ON THE SOIL AREA YOU  
11 FOUND FOUR HUNDRED AND WHAT?

12 MS. JONES: 25. IN OTHER WORDS, WE'RE  
13 WANTING TO TAKE ALL AREAS THAT HAVE SOIL  
14 CONTAMINATION ABOVE 400 AND REMEDIATE THOSE AREAS  
15 DOWN TO 400. 400 PLUS.

16 MS. BROWN: AND THEN THE FRONT AREA  
17 THERE WHERE THE TANK USED TO SIT, YOU FOUND WHAT  
18 THERE?

19 MS. JONES: BASICALLY WE WERE GOING ON  
20 SAMPLE LOCATION PR-01. AND WHAT WE FOUND THERE  
21 WAS 675.

22 MS. BROWN: THAT'S WHERE THEY PUMPED  
23 THE BATTERY ACID OUT OF THE SUMP UP INTO THAT  
24 HOLDING TANK.

25 MS. JONES: CORRECT. WHICH WOULD MAKE  
HANWELL REPORTING SERVICE

1 SENSE WHY WE WOULD FIND A LEVEL ABOVE 400 THERE.

2 MS. BROWN: WAS WAS THAT SUMP TANK  
3 THEN UNLINED RIGHT THERE?

4 MS. JONES: RIGHT HERE OR RIGHT THERE?

5 MS. BROWN: BETWEEN THE BUILDING WHERE  
6 YOU CALL THE WORK SHED.

7 MS. JONES: OKAY. OVER HERE?

8 MS. BROWN: YES. IN THERE WHERE THE  
9 SUMP TANK WAS LOCATED. WAS IT UNLINED?

10 MS. JONES: IT WAS AN ASPHALT PAD  
11 THERE BUT AT ONE TIME THE SUMP TANK WAS UNLINED.  
12 IT WAS LITERALLY AN UNLINED PIT.

13 MS. BROWN: DID YOU NOT CHECK THAT  
14 AREA?

15 MS. JONES: BASICALLY WE CHECKED THE  
16 AREA HERE AND WE BASICALLY USED PR-01 TO TRY TO  
17 ESTIMATE TO SEE IF THAT AREA WAS CONTAMINATED.  
18 WHAT WE LOOKED AT IN LOOKING AT THE ASPHALT PAD  
19 THERE WAS SEVERAL AREAS ON THE ASPHALT PAD WHERE  
20 THERE WAS ACTUALLY I GUESS WHAT I WOULD CALL  
21 STRESSED AREAS. WHAT I MEAN BY STRESSED AREA IF  
22 THERE WAS A SPILL OR IF THERE EVER WAS A SPILL  
23 THERE IF THERE WERE ACTUALLY CRACKS IN THE  
24 ASPHALT IT WOULD MAKE IT FAIRLY EASY FOR THE  
25 CONTAMINATION TO FLOW DOWN TO THE SOIL.

HANWELL REPORTING SERVICE



1 MS. BROWN: AND THE TARMAC IS NOT LIKE  
2 ASPHALT. IT'S POROUS TO THE SENSE IT COULD HAVE  
3 EVENTUALLY YEARS TO COME WOULD LEACH THROUGH.

4 MS. JONES: CORRECT. WHICH IS WHAT WE  
5 FOUND IN THIS AREA, IN THESE AREAS.

6 MS. BROWN: IS THIS AREA, WHAT WERE  
7 YOUR FINDINGS THERE?

8 MS. JONES: BASICALLY WE HAD A HIT OF  
9 6500 PARTS PER MILLION.

10 MS. BROWN: THAT'S WHERE THEY BROUGHT  
11 THE TRUCKS IN AND DUMPED THE BATTERIES  
12 SUPPOSEDLY UNDERNEATH THAT SHED.

13 MS. JONES: OKAY. IN THIS AREA HERE I  
14 THINK IT WAS AROUND 525 JUST OFF THE TOP OF MY  
15 HEAD.

16 MS. BROWN: THAT'S WHERE THEY HAD  
17 WOODEN CRATES THAT THEY HAD THE GROUND UP BATTERY  
18 CASINGS IN.

19 MR. ROGERS: ALL OF THOSE DATA POINTS  
20 ARE IN THE ACTUAL RECORD. I THINK ONE POINT  
21 YVONNE TRIED TO EMPHASIZE EARLIER WAS MOST OF THE  
22 SAMPLES CAME IN BELOW THAT NUMBER.

23 MS. JONES: THE MAJORITY OF THEM WERE  
24 UNDER 400.

25 MR. ROGERS: AND IF THERE WERE ANY

HANWELL REPORTING SERVICE

1 RESIDUALS FROM DUMPING AND THAT SORT OF THING  
2 FROM LIQUIDS IN BATTERIES AND THAT SORT OF THING  
3 YOU WOULD SEE IT WELL ABOVE THOSE LEVELS. WHAT  
4 WE SAW THROUGHOUT THE SITE IS RELATIVELY LOW  
5 CONCENTRATIONS. PARTIALLY BECAUSE THERE ALREADY  
6 WAS A CLEAN UP DONE THERE. WE HAVE IDENTIFIED  
7 SOME THINGS THAT FOR THE MOST PART ARE SLIGHTLY  
8 ABOVE OUR CLEAN UP GOAL OF 400. THEREFORE WE ARE  
9 PROPOSING TO GO OUT AND DO SOME REMEDIATION  
10 DEALING WITH THAT. THIS IS -- THE SKETCHED IN  
11 AREA IS BASICALLY AN APPROXIMATION AND GUESS OF  
12 THE ACTUAL AMOUNT OF CONTAMINATED SOIL BECAUSE AT  
13 THIS STAGE WE DON'T HAVE ENOUGH SAMPLES TO  
14 TOTALLY QUANTIFY THAT. BUT WE DON'T REALLY NEED  
15 TO AT THIS POINT. WHEN WE GO IN THERE TO TRY TO  
16 ACTUALLY REMEDIATE IT YOU COULD FURTHER QUANTIFY  
17 THOSE STATIONS BETWEEN SAMPLE POINTS TO DETERMINE  
18 JUST WHERE DO YOU HAVE CONTAMINATION ABOVE THE  
19 400 AND DEAL WITH THE EXCAVATION AND REMOVAL OR  
20 WHATEVER THE REMEDY HAPPENS TO BE. THERE'S ONLY  
21 TWO SAMPLES THAT WERE ELEVATED AND ONE OF THOSE  
22 COULDN'T BE REPRODUCED.

23 MS. JONES: CORRECT. WHICH WAS THIS  
24 AREA.

25 MR. ROGERS: BUT IN RELATIVE TERMS

HANWELL REPORTING SERVICE

1       THERE'S A VERY LIGHT CONTAMINATION LEFT AT THIS  
2       SITE BASED ON ALL THESE SAMPLE POINTS.  AND  
3       THEREFORE YVONNE'S GOING TO GO INTO SLIDES  
4       TALKING ABOUT CONSIDERATIONS OF DIFFERENT WAYS TO  
5       DEAL WITH THIS SITE AND REMEDIATE IT.  AND AFTER  
6       WE ACTUALLY SIGN THE RECORD OF DECISION WE'LL DO  
7       SOME FURTHER ANALYSIS TO FIGURE OUT EXACTLY WHAT  
8       SHOULD BE TAKEN OUT AND DEALT WITH AS WE REMEDY  
9       IT.

10               MR. EARLE:  I HAVE ONE QUESTION.  I  
11       THINK I HEARD EARLIER THESE PEOPLE OWNED 20  
12       ACRES, RIGHT?

13               MS. BROWN:  RIGHT.

14               MR. EARLE:  AND MY QUESTION IS THAT  
15       EVERYTHING THAT YOU HAVE DONE HAS BEEN DONE  
16       AROUND ABOUT THE FIRST ONE POINT SOME ACRES  
17       AROUND THE FRONT.  THESE PEOPLE HAVE BEEN GOING  
18       APPROXIMATELY TWO AND A HALF MILES TO OLDHAM'S  
19       GARAGE AND DUMPING ON THE BACK OF HIS PROPERTY.  
20       NOW, IF THEY OWN 20 ACRES IF THEY WERE THAT  
21       DEVIOUS TO DO IT ON SOMEONE ELSE'S PROPERTY WHY  
22       WOULD THEY NOT GO FURTHER BACK IN THOSE WOODS AND  
23       DUMP IT ON PROPERTY THAT THEY OWN?

24               MS. BROWN:  THAT'S WHY I ASKED HAD  
25       THEY TESTED BACK THERE.

              HANWELL REPORTING SERVICE

1                   MR. ROGERS: WELL, THAT'S PROBABLY  
2 TRUE FOR THE WHOLE NORTHWEST SECTOR OF COLUMBIA.  
3 WHAT BASIS DO YOU USE TO GO OUT AND LOOK FOR  
4 NEEDLES IN A HAYSTACK? IF THERE'S INFORMATION  
5 THAT HE WAS DUMPING SOMEWHERE ELSE USUALLY PEOPLE  
6 AROUND THERE KNOW WHAT HE WAS DOING WHEN HE WAS  
7 OPERATING. YOU SHOULD GET THAT INFORMATION TO US  
8 SO WE CAN PURSUE THOSE TIPS. THERE'S NOTHING IN  
9 THE RECORD THAT INDICATES THERE WAS ANY REASON TO  
10 BELIEVE HE WENT OUT AND DID ANYTHING ON THE OTHER  
11 PARTS OF THE ACRES THAT HE OWNED.

12                  MR. EARLE: WELL, YOU CAN HARDLY SEE  
13 HIM IN THE RED TRUCK AND ASK HIM WHERE HE'S  
14 GOING?

15                  MR. ROGERS: YES. THAT'S WHAT I'M  
16 SAYING THAT'S A WHOLE UNIVERSE. AND THERE WOULD  
17 BE NO WAY OF IDENTIFYING WHERE TO START TO LOOK  
18 FOR IT. IF THERE WERE SOME KNOWLEDGE THAT  
19 SOMETHING ELSE WAS GOING ON YOU CAN PASS THAT  
20 BACK TO US AND WE CAN PURSUE IT. BUT THE RECORD  
21 AND STATE ACTIVITIES WITH THE STATE AND ANYTHING  
22 ELSE FROM THE HISTORY OF THE SITE WOULD INDICATE  
23 THAT HIS OPERATIONS AT THE SITE DEALT WITH THE  
24 IMMEDIATE AREA THAT WAS INVESTIGATED. AND YES  
25 MAYBE HE DID SOMETHING OFF SITE. IF YOU GIVE US

HANWELL REPORTING SERVICE

1 MORE INFORMATION AS TO THAT WE'LL SEE THAT THAT'S  
2 LOOKED INTO.

3 MR. HAYES: THERE'S ONE OTHER THING  
4 YOU MIGHT WANT TO REMEMBER ABOUT BATTERY CRACKING  
5 OPERATIONS. WE HAVE A LOT OF SUPERFUND SITES  
6 THAT ARE BATTERY CRACKING OPERATIONS. THEY WERE  
7 CONDUCTING THE OPERATIONS TO RECLAIM THE LEAD.  
8 SO THE ACTUAL LEAD PLATES THEY DIDN'T DISPOSE OF.  
9 THAT'S WHAT THEY WANTED TO RESELL. THE WASTE WAS  
10 ASSOCIATED WITH THE SULFURIC ACID AND THE LIQUID  
11 THAT THEY POURED OUT OF IT. AND AT MOST BATTERY  
12 CRACKING SITES AND APPARENTLY AT THIS ONE, TOO,  
13 THEY JUST DUMPED THAT RIGHT THERE WHERE THEY  
14 CRACKED THE BATTERIES. THERE WASN'T ANY POINT IN  
15 TAKING THAT WASTE BACK IN THE WOODS AND POURING  
16 IT OUT BECAUSE THEY WERE POURING IT OUT RIGHT  
17 THERE AT THE SITE. SO WHILE IT IS POSSIBLE THAT  
18 THEY CONDUCTED SOME DISPOSAL OPERATIONS  
19 ELSEWHERE, IF THIS SITE WAS LIKE MOST BATTERY --

20 MS. BROWN: IT ISN'T POSSIBLE. THEY  
21 DID IT. THEY WERE CAUGHT DOING IT.

22 MR. HAYES: IF THIS SITE IS LIKE MOST  
23 BATTERY CRACKING OPERATIONS THOUGH, THE REAL  
24 PROBLEM IS THE WASTE ACID THAT THEY DUMPED RIGHT  
25 ON THE SITE.

HANWELL REPORTING SERVICE

1                   MS. BROWN: WELL, DHEC CAME TO MY  
2 HOME. WE'RE BACK IN THAT PROPERTY. ON THEIR  
3 PROPERTY WITHOUT THEIR KNOWLEDGE TO SEE IF THERE  
4 WAS ANY POSSIBILITY THAT THEY HAD DUMPED BACK  
5 THERE.

6                   MR. ROGERS: TYPICALLY IF THEY WERE TO  
7 HAUL OFF THESE CASINGS YOU SHOULD HAVE SEEN  
8 EVIDENCE. AS YOU SAID HE DUMPED IT RIGHT THERE.  
9 IT WAS JUST DUMPED IN THE CREEK OR IT WAS  
10 CONTROLLED IN SOME PIT AND DEALT WITH AT A LATER  
11 POINT. IN THAT BUSINESS THE LEAD IS PULLED OUT  
12 AND RECYCLED. THEY'RE SENT OFF SITE. ALL  
13 THEY'RE DOING IS CUTTING OPEN BATTERY CASINGS AND  
14 DRAINING THE LIQUID OUT AND DUMPING IT IN THAT  
15 AREA. THE WASTE WAS CONTROLLED TO SOME EXTENT BY  
16 SOME TANKS. THE BIGGEST BULK OF WHAT IS LEFT IS  
17 THE CASINGS. THOSE PILE UP AND YOU HAVE TO DO  
18 SOMETHING WITH THEM. YOU'RE SAYING THEY BURNED  
19 THEM.

20                  MS. BROWN: THEY GROUND THEM UP. AND  
21 HELD THEM FOR A WHILE. BEFORE THEY DID THAT WHEN  
22 DHEC CAUGHT THEM OR AT LEAST WHENEVER I CARRIED  
23 THE SAMPLE TO DHEC TO SHOW THEM THAT THEY WERE  
24 BURNING DOWN THERE ON THE PROPERTY.

25                  MR. ROGERS: THE ONLY THING THEY WOULD  
  
HANWELL REPORTING SERVICE

1 BE BURNING WAS THE CASINGS. LATER AS THEY TRIED  
2 TO CONTROL THE OPERATION WHILE THEY WERE PURSUING  
3 PERMITTING THEY PUT THAT IN THE TRUCK AND WERE  
4 TAKING IT SOMEWHERE.

5 MS. BROWN: AND BEFORE THEY TOOK IT  
6 OVER THERE THEY WERE PUTTING IT UP IN THAT BIG  
7 LONG TANK SITTING ON THE OUTSIDE BECAUSE THEY  
8 WERE GETTING MORE THAN THE SUMP TANK WOULD HOLD.

9 MR. ROGERS: IT'S ALSO CONCEIVABLE  
10 IT'S NOT BEYOND THESE PEOPLE TO GO OUT AND JUST  
11 DUMP IT IN THE SEWER.

12 MR. EARLE: ANOTHER QUESTION I KNOW OF  
13 THE RED TRUCK AND I KNOW THE RED TRUCK HAS PASSED  
14 BY MY HOUSE. IT'S A NICE SIZED TRUCK. IF YOU'RE  
15 GOING TO TAKE SOMETHING AWAY FROM YOUR PLACE AND  
16 DUMP IT QUITE FRANKLY YOU'D HAVE THE WOODS RIGHT  
17 THERE. IT'S THEIR PROPERTY. YOU COULD NOT SEE  
18 WHAT WAS GOING ON BEHIND THEIR PROPERTY.

19 MR. ROGERS: A LOT OF THINGS COULD BE  
20 BACK THERE. THERE'S A ROAD BACK INSIDE THE  
21 PROPERTY.

22 MS. BROWN: IS IT POSSIBLE THAT E.P.A.  
23 WILL DO ANY TESTING ON THE REST OF THAT ACREAGE?

24 MR. ROGERS: WE WOULDN'T WANT TO  
25 COMMIT TO THAT RIGHT NOW. WE'RE TRYING TO DEAL

HANWELL REPORTING SERVICE

1 WITH THIS SITE, THE KNOWN SITE. I THINK IF WE  
2 HAD SOME CONFIRMATION --

3 MS. BROWN: YOU WERE TALKING ABOUT  
4 TRYING TO TURN IT INTO A RESIDENTIAL AREA OR  
5 SOMETHING THAT WOULD BE FEASIBLE FOR USE. WHAT  
6 WOULD SAY THAT THAT OTHER PART OF THE ACREAGE IS  
7 NOT CONTAMINATED, TOO?

8 MR. ROGERS: ALL WE'RE SAYING IS WE'RE  
9 USING CLEAN UP STANDARDS BASED ON POTENTIAL  
10 FUTURE USE OF RESIDENTIAL. WE DON'T KNOW WHAT'S  
11 GOING TO HAPPEN TO THAT PROPERTY. WE HAVE NO  
12 INTEREST IN IT OTHER THAN TO CLEAN IT UP TO WHAT  
13 WE FEEL IS A PROTECTIVE LEVEL FOR A REALISTIC  
14 FUTURE USE SCENARIO. IT DOESN'T MEAN IT WILL  
15 EVER BE USED FOR RESIDENTIAL.

16 MS. BROWN: PROBABLY WON'T.

17 MR. ROGERS: LET'S LET YVONNE FINISH  
18 AND WE'LL BE MORE THAN HAPPY TO TALK TO YOU  
19 AFTERWARDS ABOUT ANY OTHER CONCERNS OR ANY OTHER  
20 THINGS YOU MIGHT HAVE.

21 MS. JONES: TYPICALLY DURING THE  
22 FEASIBILITY STUDY WHICH I WILL CAUSE THE FS FOR  
23 THE DURATION OF THE MEETING, NORMALLY LOOKS AT  
24 SEVERAL ALTERNATIVES IN ORDER TO REMEDIATE  
25 CONTAMINATION AT THE SITE. E.P.A. LOOKED AT

HANWELL REPORTING SERVICE



1       THREE ALTERNATIVES.   AND THE REASON FOR THAT WAS  
2       ONE THE AMOUNT OF CONTAMINATION ON THE SITE WAS  
3       CONSIDERED LOW.   IN OTHER WORDS, USUALLY IF YOU  
4       HAVE APPROXIMATELY 2,000 CUBIC YARDS OF SOIL THEN  
5       YOU KNOW YOU'LL PROBABLY LOOK AT LEAVING IT ON  
6       SITE.   AND IN THIS CASE WE'RE ESTIMATING THAT WE  
7       HAVE APPROXIMATELY 1100 CUBIC YARDS OF SOIL.   THE  
8       THREE ALTERNATIVES THAT WERE LOOKED AT WERE THE  
9       FIRST ALTERNATIVE BEING NO ACTION WHICH WOULD  
10      LITERALLY BE DOING NOTHING.   AND BECAUSE OF THAT  
11      WE WOULD BE LEAVING CONTAMINATION ON THE SITE.  
12      BECAUSE WE ARE LEAVING CONTAMINATION ON THE SITE  
13      WE'D HAVE TO DO LONG-TERM MONITORING OF THE SOIL  
14      AND GROUND WATER.   AND THAT LONG-TERM MONITORING  
15      BEING 30 YEARS.   AND OF COURSE THIS IS THE COST  
16      ASSOCIATED WITH DOING NOTHING.

17               MS. BROWN:   E.P.A. WOULD BE  
18      RESPONSIBLE FOR THE LONG-TERM CHECKING OF THE  
19      MONITORING WELLS OR WHATEVER?

20               MS. JONES:   CORRECT.   AND AGAIN, YOU  
21      WOULD BE LEAVING CONTAMINATION ON SITE.   THE  
22      SECOND ALTERNATIVE TO BE CONSIDERED WAS LIMITED  
23      ACTION WHICH WOULD CONSIST OF DEED RESTRICTIONS  
24      ON THE SITE, PUTTING UP A FENCE AND OF COURSE  
25      BECAUSE WE ARE LITERALLY STILL LEAVING

                  HANWELL REPORTING SERVICE

1       CONTAMINATION ON THE SITE WE'D HAVE TO DO LONG  
2       TERM MONITORING OF THE SOIL AND GROUND WATER FOR  
3       APPROXIMATELY 30 YEARS.  AND AS YOU CAN SEE, THE  
4       COST ASSOCIATED WITH EITHER ONE OF THOSE IS LESS  
5       THAN MAYBE \$800,000.  IN OTHER WORDS, THE ONLY  
6       THING YOU'RE DOING IN THIS PARTICULAR ALTERNATIVE  
7       IS PUTTING UP A FENCE AND OF COURSE PUTTING DEED  
8       RESTRICTIONS ON THAT SO THAT IT COULD NOT BE USED  
9       AS RESIDENTIAL.

10       THE THIRD ALTERNATIVE WHICH E.P.A.  
11       CONSIDERED WAS EVACUATION AND OFF SITE DISPOSAL  
12       TO EITHER A NON HAZARDOUS LANDFILL OR A HAZARDOUS  
13       LANDFILL.  BASICALLY IF THE CONTAMINATION WAS  
14       REMOVED OFF SITE YOU WOULD NOT HAVE TO DO  
15       LONG-TERM MONITORING OF THE SOIL BECAUSE YOU HAVE  
16       REMOVED THE SOURCE LITERALLY.  HOWEVER, TO ENSURE  
17       THAT WE ARE STILL BEING PROTECTIVE OF THE GROUND  
18       WATER WHICH WAS THE CONCERN EARLIER E.P.A. WOULD  
19       STILL MONITOR THE GROUND WATER ON AN ANNUAL BASIS  
20       FOR FIVE YEARS.  BASICALLY THE REASON WHY WE HAVE  
21       TWO DIFFERENT COSTS IS IF THE WASTE WINDS UP  
22       GOING TO A NON HAZARDOUS LANDFILL THAT COST WOULD  
23       BE APPROXIMATELY \$241,000.  IF THE WASTE WAS TO  
24       GO TO A HAZARDOUS LANDFILL -- IN OTHER WORDS ONCE  
25       WE --

HANWELL REPORTING SERVICE

1 MS. BROWN: WHERE DO WE HAVE A  
2 HAZARDOUS LANDFILL?  
3 MS. JONES: THE ONE THAT WE LOOKED AT  
4 I THINK WAS IN DORCHESTER. I'M NOT SAYING THAT'S  
5 WHERE THIS WOULD GO. WHAT WOULD HAPPEN IS -- AND  
6 THAT'S WHY WE HAVE AN EITHER/OR HERE. BASICALLY  
7 WHAT WE DO WHEN WE GO OUT TO THE SITE WE WILL  
8 BASICALLY TEST THE SOIL TO SEE IF IT'S CONSIDERED  
9 HAZARDOUS OR NON HAZARDOUS. BASICALLY THERE ARE  
10 CERTAIN REQUIREMENTS AND CERTAIN LEVELS THAT WE  
11 HAVE TO OBTAIN AND THAT LEVEL WILL DETERMINE  
12 WHETHER OR NOT IT WILL GO TO A HAZARDOUS OR NON  
13 HAZARDOUS LANDFILL.

14 THE COST ASSOCIATED WITH IT GOING TO A  
15 HAZARDOUS LANDFILL IS \$940,000 AND THE REASON FOR  
16 THAT INCREASE IS WE WOULD NOT BE TREATING IT ON  
17 SITE. BUT OF COURSE IN ORDER FOR IT TO GO TO  
18 THAT HAZARDOUS LANDFILL THEY WOULD HAVE TO TREAT  
19 IT THERE FOR PROPER DISPOSAL.

20 E.P.A. BASICALLY USES NINE CRITERIA IN  
21 EVALUATING THE DIFFERENT ALTERNATIVES. THE FIRST  
22 TWO CRITERIA ARE WHAT WE WOULD CALL THE THRESHOLD  
23 CRITERIA. BASICALLY THAT CONSISTS OF THE OVERALL  
24 PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT IN  
25 COMPLIANCE WITH APPLICABLE AND RELEVANT AND

HANWELL REPORTING SERVICE

1 APPROPRIATE REQUIREMENTS. THESE TWO ARE THE MOST  
2 IMPORTANT IN THAT THEY ARE TO ENSURE THAT THAT  
3 PARTICULAR REMEDY IS BEING PROTECTIVE OF THE  
4 PUBLIC HEALTH AND THE ENVIRONMENT. BASED ON THE  
5 EVALUATION, ALTERNATIVE 1 AND ALTERNATIVE 2 WERE  
6 RULED OUT. ONE BECAUSE ALTERNATIVE 1 WE WEREN'T  
7 GOING TO LITERALLY BE DOING ANYTHING ON THE SITE.  
8 WE DO HAVE LEVELS ABOVE 400 PARTS PER MILLION  
9 WHICH AS MR. HAYES STATED BEFORE THAT IS  
10 CONSIDERED VERY UNSAFE. AND TWO, ALTERNATIVE 2,  
11 EVEN THOUGH WE WOULD BE PUTTING UP FENCES AND  
12 DEED RESTRICTIONS WE WOULD STILL BE LEAVING  
13 CONTAMINATED WASTE ON SITE. ALTERNATIVE 3 IS  
14 PROTECTIVE OF THE ENVIRONMENT AND PUBLIC HEALTH.

15 E.P.A. ALSO USED WHAT WE WOULD CALL  
16 BALANCING CRITERIA. WE LOOK AT THE COSTS, HOW  
17 EASY IT IS TO IMPLEMENT IT, THE SHORT TERM  
18 EFFECTIVENESS, THE LONG-TERM EFFECTIVENESS. IN  
19 OTHER WORDS, IS IT GOING TO BE PERMANENT OR IS IT  
20 SOMETHING THAT WE'RE GOING TO HAVE TO COME BACK  
21 AND CHECK ON AND IF THERE'S STILL A PROBLEM STILL  
22 DO SOMETHING. IN ADDITION TO THAT WE ALSO LOOKED  
23 AT THE REDUCTION OF TOXICITY, MOBILITY AND THE  
24 VOLUME THROUGHOUT THE TREATMENT. AT THIS TIME  
25 E.P.A. HAS USED THE FIRST SEVEN OF THE NINE

HANWELL REPORTING SERVICE

1 CRITERIA TO EVALUATE THOSE ALTERNATIVES. THE  
2 OTHER TWO CRITERIA CONSIST OF THE STATE  
3 ACCEPTANCE WHICH IS CONSIDERATION OF THE STATE'S  
4 OPINION OF THE PREFERRED ALTERNATIVE AND THE 9TH  
5 CRITERIA IS COMMUNITY ACCEPTANCE WHICH IS THE  
6 CONSIDERATION OF PUBLIC COMMENT ON THE PROPOSED  
7 PLAN WHICH I'M SURE MANY OF YOU RECEIVED IN THE  
8 MAIL.

9 BASICALLY E.P.A.'S PREFERRED ALTERNATIVE IS  
10 ALTERNATIVE 3 WHICH CONSISTS OF EXCAVATION AND  
11 OFF SITE DISPOSAL WHICH INCLUDES EXCAVATION OF  
12 SURFACE SOILS DOWN TO A LEVEL OF ONE FOOT. AND  
13 AGAIN AS I STATED BEFORE AND I GUESS WHICH I WAS  
14 SHOWING THE AERIAL MAP OF THE EXTENT OF LEAD  
15 CONTAMINATION WE WOULD BE LOOKING AT THOSE AREAS  
16 TO REMEDIATE THEM DOWN TO A LEVEL OF 400 PARTS  
17 PER MILLION.

18 AGAIN AT THIS TIME WE DO NOT KNOW WHETHER OR  
19 NOT IT WILL BE -- WHETHER THE WASTE WILL BE SENT  
20 TO A NON HAZARDOUS WASTE LANDFILL OR A HAZARDOUS  
21 WASTE LANDFILL. AT THE TIME THAT WE ACTUALLY GO  
22 OUT AND EXCAVATE THE SOIL WILL BE TESTED. AND  
23 DEPENDING ON THAT NUMBER -- IN OTHER WORDS, IF  
24 YOU KNOW THE SOIL OR LEACHABILITY OF THE SOIL  
25 EXCEEDS 5 PARTS PER MILLION FOR LEAD -- AND I

HANWELL REPORTING SERVICE

1 GUESS I SHOULD BACK UP. IN OTHER WORDS, IF YOU  
2 HAVE SOIL AND YOU HAVE SOIL I GUESS WITH LEAD  
3 CONTAMINATION WITHIN SOIL. WHAT LEACHABILITY  
4 MEANS IS JUST THE ABILITY OF LEAD TO LEACH  
5 THROUGH THE SOIL FARTHER DOWN AND JUST BE MOBILE  
6 AND LEACH TO GROUND WATER. THAT'S REALLY WHAT  
7 LEACHABILITY MEANS.

8 AND I GUESS AT THIS TIME THAT WOULD CONCLUDE  
9 I GUESS OUR ALTERNATIVES. I GUESS NOW IS A GOOD  
10 TIME FOR QUESTIONS.

11 MS. ANDERSON: I'M JUST WONDERING WHY  
12 THEY OPENED THE GATE THERE.

13 MS. JONES: WHY THEY OPENED THE GATE?

14 MS. ANDERSON: YES.

15 MS. BROWN: WHY THE GATE IS OPEN NOW.

16 MR. NEILSEN: IT'S BEEN OPEN FOR ABOUT  
17 THREE WEEKS. I THOUGHT SOMEONE WAS IN THERE  
18 WORKING OR SOMETHING BECAUSE THE GATE IS ALWAYS  
19 OPEN.

20 MS. JONES: I DON'T THINK SO. I DON'T  
21 THINK WE'VE BEEN ON SITE.

22 MR. NEILSEN: IT'S BEEN OPEN FOR THREE  
23 WEEKS. FOUR WEEKS AGO WE WALKED BY AND IT WAS  
24 CLOSED. AND THEN THREE WEEKS AGO WE WALKED BY  
25 AND IT WAS OPEN. AND IT'S BEEN OPEN EVER SINCE.

HANWELL REPORTING SERVICE

1                   MS. HICKS:  EVEN WHEN THEY WAS  
2   REPAIRING THE BRIDGE THE GATE WAS OPEN.

3                   MS. JONES:  I GUESS SOMETHING THAT I  
4   DID NOTICE REALLY EVEN THOUGH WE HAVE THAT GATE  
5   THERE AS EVERYONE PROBABLY KNOWS RIGHT NOW ANYONE  
6   CAN WALK ON THAT SITE.  I'M NOT REALLY FOR  
7   CERTAIN THAT --

8                   MR. NEILSEN:  IT'S NOT A SECURE SITE.

9                   MS. BROWN:  IT MAINLY STOPS CARS FROM  
10  GOING IN THERE.

11                  MR. ROGERS:  WHEN WE FIRST GOT  
12  INVOLVED IN THE SITE ONE OF THE CONCERNS WAS THE  
13  OPEN PIT IN WHERE THE SCALES USED TO BE.  AND THE  
14  FACT THAT PEOPLE HUNG OUT IN THERE.  SO ONE OF  
15  THE EFFORTS THAT WE DONE WAS TO GO IN AND TEST  
16  WHAT WAS IN THE PIT TO MAKE SURE THERE WASN'T  
17  ANYTHING HAZARDOUS IN THERE AND TO BACK FILL THE  
18  HOLE.  WE ALSO PUT THAT GATE ACROSS THERE AND  
19  DECIDED NOT TO FENCE THE SITE BECAUSE WE DIDN'T  
20  KNOW HOW LONG THE FENCE WOULD STAY THERE BECAUSE  
21  WE ASSUMED SOMEBODY WOULD TAKE IT.  AND IT'S NOT  
22  THE MOST DESIRABLE PLACE TO HANG OUT.  AND AS  
23  BERNIE WAS TALKING ABOUT SOMEBODY WALKING ON THAT  
24  SITE DOESN'T EXPERIENCE AN UNACCEPTABLE HEALTH  
25  RISK WITH INFREQUENT TRESPASSING IS WHAT WE CALL

                  HANWELL REPORTING SERVICE

1 IT. THAT'S LEGALLY WHAT IT IS. BUT WE HAVEN'T  
2 TAKEN ANY OTHER MEASURES BECAUSE NOW THAT WE'VE  
3 BEEN THROUGH THE REMEDIAL INVESTIGATION AND FOUND  
4 OUT WHAT IS TRULY AT THE SITE AND LOOKED AT THE  
5 RISK ASSESSMENT APPROACH WE DON'T FEEL LIKE  
6 THERE'S ANY CURRENT EXPOSURE ROUTE UNLESS YOU  
7 STUCK SOMEBODY OUT THERE AND THEY BASICALLY LIVED  
8 OUT THERE AND PLAYED IN THE SOIL. SO I THINK I'M  
9 LESS CONCERNED ABOUT WHETHER THEY CAN WALK AROUND  
10 THE GATE VERSUS WHY IS THE GATE OPEN. AND THEY  
11 CAN GO BY TOMORROW AND CHECK AND SEE WHY IT'S  
12 OPEN AND WE CAN PUT A PADLOCK BACK ON. BUT WE  
13 MIGHT WANT TO LOOK INTO WHY SOMEBODY IS IN THERE  
14 AT ALL.

15 MS. JONES: ONE QUICK THING THAT I  
16 NEED TO ADD, AGAIN THIS IS E.P.A.'S PREFERRED  
17 ALTERNATIVE. AND AS I STATED BEFORE YOU KNOW  
18 BEFORE FINALIZING ANYTHING WE WOULD TAKE COMMENTS  
19 FROM THE STATE AND ALSO COMMENTS FROM THE  
20 CITIZENS TO SEE HOW DO YOU FEEL. DO YOU FEEL  
21 COMFORTABLE WITH THIS ALTERNATIVE. AS EVERYONE  
22 PROBABLY KNOWS THE COMMENT PERIOD STARTED ON  
23 NOVEMBER 22ND AND AS OF RIGHT NOW IT WOULD BE  
24 CONTINUED THROUGH DECEMBER 22. IF AN EXTENSION  
25 HAS NOT BEEN REQUESTED BY THAT TIME E.P.A. WILL

HANWELL REPORTING SERVICE



1       BASICALLY MOVE TOWARDS WHAT WE WOULD CALL A  
2       RECORD OF DECISION.   BASICALLY WHAT THAT IS IS A  
3       DECISION AS TO WHAT REMEDY WILL BE USED TO  
4       REMEDiate THE SITE.   AS CYNTHIA STATED EARLIER AN  
5       EXTENSION CAN BE REQUESTED AT ANY TIME DURING THE  
6       PUBLIC COMMENT PERIOD.

7               MR. MOSSER:   MY NAME IS GLEN MOSSER.   I  
8       LIVE ABOUT FOUR MILES FROM THE SITE.   AND I WANT  
9       TO SAY THAT I AGREE WITH YOUR ALTERNATIVE AND I  
10      APPRECIATE THE GOVERNMENT'S CONTINUING TO FOLLOW  
11      THIS THING THROUGH TO A SATISFACTORY CONCLUSION  
12      FOR US.   I'VE GOT A COUPLE OF QUESTIONS THOUGH.  
13      IF YOU DON'T HAVE ANY EXTENDED COMMENT PERIOD AND  
14      YOU DECIDE TO GO AHEAD WITH THIS ALTERNATIVE WHEN  
15      WOULD THE WORK BEGIN, HOW LONG WOULD IT TAKE AND  
16      WOULD THERE BE ANY EXPOSURE TO THE PEOPLE THAT  
17      LIVED IN THE IMMEDIATE AREA AND SPECIFICALLY  
18      ACROSS THE STREET AND UP THE HILL WHILE THIS WAS  
19      BEING DISLODGED AND LOADED IN TRUCKS AND SOMEBODY  
20      WAS TALKING ABOUT WIND BLOWING AND CREATING DUST.  
21      IS THERE ANY HAZARD TO THE FOLKS WHILE THE  
22      REMEDIATION IS GOING ON?

23              MS. JONES:   I GUESS THE FIRST PART OF  
24      YOUR QUESTION AS FAR AS WHEN WOULD THE WORK TAKE  
25      PLACE OR A HOW LONG WOULD IT TAKE PLACE,

              HANWELL REPORTING SERVICE

1       BASICALLY AS WE TALKED ABOUT EARLIER THERE ARE  
2       POTENTIALLY RESPONSIBLE PARTIES WHICH WE WILL  
3       HAVE TO NOTICE UPON THE SIGNING OF THE RECORD OF  
4       DECISION.  AT THAT TIME THEY ARE GIVEN A CERTAIN  
5       TIME LIMIT TO ACTUALLY DETERMINE WHETHER OR NOT  
6       THEY WOULD LIKE TO CONDUCT THE CLEAN UP  
7       THEMSELVES OF COURSE WITH E.P.A.'S OVERSIGHT OR  
8       WHETHER OR NOT THEY DO NOT WANT TO CONDUCT IT.  
9       TYPICALLY NEGOTIATIONS WHICH IS WHAT WE WOULD  
10      CALL THAT MAY LAST ANYWHERE FROM -- REALLY JUST  
11      DEPENDS ON THE PARTIES THAT YOU'RE WORKING WITH.  
12      BUT YOU KNOW AT LENGTH YOU'RE PROBABLY LOOKING AT  
13      A THREE TO FOUR MONTH TIME PERIOD BEFORE THAT  
14      WOULD BE WORKED OUT.

15           AS FAR AS THE ACTUAL WORK BEING DONE ON THE  
16      SITE YOU PROBABLY WILL NOT SEE THAT DUE TO ITS A  
17      BEHIND THE SCENES PROCESS GOING ON.  YOU PROBABLY  
18      WOULDN'T SEE THAT UNTIL MAYBE EARLY -- LATE  
19      SUMMER OR EARLY FALL.  IT REALLY JUST DEPENDS ON  
20      THE OUTCOME OF THAT.

21           MR. ROGERS:  THERE'S A LOT OF UNKNOWNNS  
22      IN THERE.  THE ENFORCEMENT ISSUE WE WOULD HAVE TO  
23      BY LAW PURSUE IF THERE ARE VIABLE PARTIES OUT  
24      THERE.  IT MAY BE THEY JUST WON'T WANT TO TALK TO  
25      US OR WHATEVER.  THAT COULD TAKE UP A SMALL PART

          HANWELL REPORTING SERVICE

1 OF TIME OR A LONG PERIOD OF TIME. IF WE DO THE  
2 WORK WE ARE GOING TO HAVE TO HAVE A DESIGN  
3 CONTRACTOR COME IN AND DO A LITTLE DESIGN WORK TO  
4 BETTER IDENTIFY THE AREA THAT NEEDS TO BE  
5 EXCAVATED. THAT WILL BE WORKED OUT IN THE  
6 DESIGN. WE TRY TO STREAMLINE THAT AND SHORTEN IT  
7 BUT IT JUST TAKES A COUPLE OF MONTHS TO GET THOSE  
8 TYPES OF CONTRACTORS IN ORDER TO ENSURE WE GET  
9 THE BEST PRICE AND THEN PURSUING IMPLEMENTATION.  
10 IT REALLY CAN BE DONE IN A COUPLE OF WEEKS. IT'S  
11 NOT A BIG JOB. BUT DURING THAT TYPE OF WORK  
12 WHICH IS WHAT I DID FOR FIVE YEARS IN THE AGENCY,  
13 YOU CAN DO FOGGING TO DO DUST CONTROL SHOULD  
14 THERE BE CONCERN OF THINGS BLOWING OFF SITE WHILE  
15 YOU'RE DOING EXCAVATION. SO THERE'S REALLY  
16 SIMPLE TECHNIQUES FOR CONTROLLING THAT DURING THE  
17 EXCAVATION. THE ONLY CONCERN WOULD BE SOME KIND  
18 OF WIND TRANSPORTING IT DURING THE EXCAVATION AND  
19 HAULING IT OUT.

20 MR. MOSSER: CAN I MAKE ONE OTHER  
21 COMMENT? I THINK PART OF THE PROBLEM DEALING  
22 WITH STATE GOVERNMENT AND LOCAL GOVERNMENT AND  
23 FEDERAL GOVERNMENT, PART OF THE COMMUNITY'S  
24 CONCERN WAS THAT WE THOUGHT IT WAS A BAD  
25 SITUATION TO START WITH AND TRIED TO GET THE

HANWELL REPORTING SERVICE

1       AUTHORITIES TO AGREE WITH US AND THEY JUST SORT  
2       OF RAN OVER US AND WE WOUND UP BEING A SUPERFUND  
3       SITE.  THAT'S ONE OF THE REASONS WE'RE NOT REAL  
4       COMFORTABLE WITH THE GOVERNMENT'S APPROACH TO  
5       THINGS.  BUT YOU BRING UP A POINT THAT I AS A  
6       CONTRACTOR WOULD HAVE A CONCERN OR ANY OTHER OF  
7       US WHO ARE NOW USING RECYCLING CENTERS AND TAKING  
8       OIL TO THESE COLLECTION PLACES.  WHAT YOU'RE  
9       REALLY SAYING IS THAT THIS OPERATION AT ONE TIME  
10      WAS DEEMED TO BE ACCEPTABLE AND DESIRABLE TO  
11      RECYCLE THINGS.

12                 MR. ROGERS:  NO.

13                 MR. MOSSER:  MY QUESTION IS IS THERE  
14      GOING TO BE A POINT IN TIME WHEN THE GOVERNMENT  
15      IS GOING TO COME BACK TO ME BECAUSE I PUT FIVE  
16      QUARTS OF OIL IN A RECYCLING CENTER SOMEWHERE AND  
17      THIS STUFF IS BACK.  WE WANT YOU TO HELP CLEAN IT  
18      UP NOW.

19                 MR. ROGERS:  THAT'S TWO QUESTIONS.  
20      THE FIRST ONE IS NO.  THE SECOND ONE IS I DON'T  
21      KNOW.  WE DO HAVE THAT PROBLEM WITH RECYCLING.  
22      SOME OF THEM GO UNDER.  IT'S A PROBLEM THAT  
23      UNFORTUNATELY THIS OCCURRED IN THE EARLY '80S.  
24      THE GOVERNMENT WASN'T DOING A WHOLE LOT TO  
25      CONTROL THAT KIND OF OPERATION BACK THEN.  THERE

                  HANWELL REPORTING SERVICE

1 WERE A LOT OF GOOD INTENDING FACILITIES THAT DID  
2 MARGINAL WORK IN THEIR HARDWARE INVESTMENTS,  
3 THEIR CAPITAL INVESTMENTS AND ENDED UP FOLDING.  
4 AND YOU CAN SPECULATE AS TO WHY. THEY'RE  
5 FLY-BY-NIGHT OR DIDN'T HAVE ANY BETTER GUIDANCE.  
6 THERE'S A WHOLE LOT MORE CONCERN ABOUT REGULATION  
7 IN THAT MATERIAL AND THOSE RECYCLING CENTERS  
8 TODAY SUCH THAT EVERYBODY WAS ON THE BAND WAGON  
9 TO RECYCLE A YEAR AGO. NOW WE'RE FINDING THAT  
10 WE'RE ACCUMULATING THINGS THAT THERE IS NO MARKET  
11 TO RECYCLE. RECYCLERS ARE CUTTING BACK ON THE  
12 MATERIAL THEY WANT TO TAKE BECAUSE OF LIABILITY,  
13 BECAUSE OF THE INABILITY TO MAKE ANY MONEY OFF OF  
14 IT. WASTE OIL HAS BEEN A PROBLEM FOR AT LEAST  
15 FIVE YEARS BECAUSE OF CONTROLS ON THE PRICES THEY  
16 COULD CHARGE FOR THE OIL WHEN IT WAS RECYCLED AND  
17 THEY DID GENERATE A LARGE AMOUNT OF WASTE, FAIRLY  
18 TOXIC WASTE, IN RECYCLING WASTE OIL. AND YES, WE  
19 GENERALLY AVOID GOING AFTER INDIVIDUALS WHO ARE  
20 RECYCLING. BUT THAT'S ONE OF THE CONTROVERSIES  
21 OF THE SUPERFUND. IT'S A RETROACTIVE LAW THAT  
22 GOES BACK TO AND TRIES TO GO AFTER ANYBODY WHO  
23 GENERATED OR TRANSPORTED OR COOPERATED WITH IN  
24 ANY WAY THAT FACILITY. THAT'S PROBABLY GOING TO  
25 CHANGE IN THE NEAR FUTURE. THE INDIVIDUAL IS NOT

HANWELL REPORTING SERVICE

1 A MAJOR CONCERN IF YOU'RE GOING TO A RELIABLE  
2 COMPANY. BUT YOU WOULDN'T JUST GIVE STUFF TO  
3 SOMEBODY THAT GOES DOWN THE ROAD AND ASSUME  
4 YOU'RE DOING THE RIGHT THING. THEY NEED TO LOOK  
5 LIKE A RELIABLE COMPANY WITH REASONABLE  
6 INVESTIGATION ON YOUR PART. THIS SITE WAS NEVER  
7 SANCTIONED BY THE ENVIRONMENTAL AGENCIES. IT'S  
8 STARTED ON ITS OWN. IT APPROACHED DHEC FOR A  
9 PERMIT TO DISCHARGE AND WAS REFUSED A PERMIT AND  
10 NEVER WAS A PERMITTED FACILITY.

11 MS. BROWN: IT NEVER WAS PERMITTED?

12 MR. ROGERS: NO, THEY NEVER WERE.

13 MS. BROWN: THEY DIDN'T GET THE FIRST  
14 ONE, LET ALONE THE LAST ONE.

15 MR. ROGERS: SO YOU CAN'T REALLY SAY

16 --

17 MR. MOSSER: IT WAS NOT EFFECTIVELY  
18 SHUT DOWN.

19 MR. ROGERS: UNFORTUNATELY THE LAWS  
20 DON'T GIVE US DICTATORIAL AUTHORITY. AND IN  
21 FACT THE STATE WENT IN AND DID A LOT OF THINGS.  
22 THE STATE TOOK ACTION EARLY ON. IT DID A  
23 SIGNIFICANT AMOUNT OF CLEAN UP. I WORKED IN THE  
24 EMERGENCY RESPONSE PROGRAM FOR DHEC MANY YEARS.  
25 WE WENT OUT. BUT THERE WAS INABILITY FOR YEARS

HANWELL REPORTING SERVICE

1 TO COME UP WITH HOW CLEAN IS CLEAN. THE RISK  
2 ASSESSMENT APPROACH DOES THAT BUT IT'S A VERY  
3 COMPLICATED AND LABORIOUS APPROACH THAT HAS TO BE  
4 GONE THROUGH ON THE REMEDIATION SIDE TO FIGURE  
5 OUT WHAT'S LEFT. WHAT WE'RE SAYING IS YOU HAVE  
6 RELATIVELY LOW CONTAMINATION OUT THERE WHICH IS  
7 WHY I WOULDN'T GET TOO EXCITED ABOUT DUST BLOWING  
8 ACROSS THE STREET. IT BARELY ABOVE FOR THE MOST  
9 PART OUR CLEAN UP GOAL OF 400. BUT WE DID HAVE A  
10 COUPLE OF HITS AND ONE OF WHICH WE CAN'T  
11 REPRODUCE. SO THERE'S VERY SPORADIC  
12 CONTAMINATION.

13 MS. BROWN: YOU COULDN'T GO BACK IN  
14 THE SAME SPOT AND GET THE SAME AMOUNT AGAIN?

15 MR. ROGERS: OUT OF THE ROAD SIDE  
16 DITCH WE COULD NOT WHICH TELLS YOU THERE'S VERY  
17 SPORADIC CONTAMINATION OUT THERE. BUT TO BE ON  
18 THE SAFE SIDE WHEN WE WENT BACK AGAIN AND LOOKED  
19 AT THE SITE THERE WAS A RELATIVELY HIGH HIT AND  
20 WE BASICALLY DECIDED THAT IT THREW OUR AVERAGE UP  
21 HIGH ENOUGH THAT WE SHOULD GO IN AND DO SOME  
22 REMEDIATION OF THE SOIL. AT ONE POINT IN TIME WE  
23 THOUGHT THIS SITE WAS A NO ACTION SITE BECAUSE IT  
24 IS marginally contaminated above what we would  
25 consider a safe level.

HANWELL REPORTING SERVICE

1                   MR. MOSSER:   JUST A POINT OF  
2   INFORMATION, IS YOUR REASONING FOR NOT  
3   DELINEATING ANYTHING ON THE DEED OR TALKING ABOUT  
4   RESTRICTIONS INDIFFERENT TO THE PROPERTY OWNERS  
5   AROUND THE SITE?  IF SOMEWHERE DOWN THE ROAD IT  
6   DEVALUES THEIR PROPERTY BECAUSE YOU GOT THIS.

7                   MR. ROGERS:  NO.  WE'RE CHARGED WITH  
8   CLEANING IT UP TO A SAFE FUTURE USE SCENARIO.  A  
9   REASONABLE FUTURE USE SCENARIO.  WHAT WE'RE USING  
10  IS FUTURE RESIDENTIAL BECAUSE IT'S NOT BEYOND  
11  IMAGINATION THAT THAT SITE GOES MORE RESIDENTIAL  
12  THAN COMMERCIAL.  MY ARGUMENT FOR THE SPECIFIC  
13  SITE IS IT'S A LITTLE LESS OBVIOUS FOR THAT SITE  
14  BECAUSE MOST PEOPLE AREN'T GOING TO SPEND THE  
15  MONEY TO BUILD A HOUSE AND FILL IN WHEN YOU CAN  
16  GO RIGHT UP THE ROAD AND BUILD A HOUSE OVER  
17  THERE.  SO YOU KNOW IT'S -- WE'RE USING FUTURE  
18  RESIDENTIAL BECAUSE THE AREA COULD GO  
19  RESIDENTIAL.  NOT THE MOST LIKELY THING THAT WILL  
20  EVER HAPPEN.

21                  MR. HAYES:  PLUS REMEMBER THAT THE  
22  DEED RESTRICTION WAS PART OF THE ALTERNATIVE THAT  
23  DIDN'T INVOLVE ANY SITE CLEAN UP.  SINCE WE'RE  
24  PROPOSING TO CLEAN THE SITE UP IF WE DO THERE  
25  WON'T BE ANY NEED FOR DEED RESTRICTIONS.  THE

HANWELL REPORTING SERVICE



1 SITE COULD REALLY BE USED FOR ANY PURPOSE.

2 MR. ROGERS: THE REASON WE AVOID DEED  
3 RESTRICTIONS ON THE CLEAN UP SITE IS IT'S MORE  
4 PROTECTIVE AND WE'RE NOT GOING TO ENSURE THOSE  
5 DEED RESTRICTIONS AND IN THIS CASE WE CAN JUST GO  
6 IN AND REMEDIATE THE SITE AND DEAL WITH IT.  
7 THERE'S NO REASON TO NEED THE DEED RESTRICTIONS  
8 OTHER THAN THE PLACE WILL ALWAYS BE IDENTIFIED AS  
9 HAVING BEEN A HAZARDOUS WASTE SITE AND THAT IN  
10 AND OF ITSELF TAINTS IT. BUT FOR ALL PRACTICAL  
11 PURPOSES IT WILL BE CLEAN. THAT'S THE EXTENT OF  
12 WHAT WE'RE TRYING TO DO. AND WE REALLY ARE IN NO  
13 WAY TAXED BY THE LAW TO GET INVOLVED IN ZONING OR  
14 REHAB OF THE PROPERTY VERSUS JUST CLEANING IT UP  
15 FOR A SAFE CLEAN UP.

16 MS. BROWN: THE PEOPLE THAT OWNED IT  
17 PLUS THE PEOPLE THAT'S BACKED IT ARE THEY GOING  
18 TO BE ABLE TO BE FORCED TO PAY?

19 MR. ROGERS: WE CERTAINLY PURSUE ALL  
20 THOSE. BUT IN ORDER TO GET THINGS MOVING WE DO  
21 QUICK SEARCHES TO FIGURE OUT WHO COULD BE LIABLE  
22 AND WE DO NEGOTIATIONS. WE START USING FEDERAL  
23 MONEY TO PURSUE IT. ANY TIME WE SPEND FEDERAL  
24 MONEY WE ALWAYS TRY TO GET IT BACK FROM ANYBODY  
25 WHO HAS INVOLVMENT IN THE SITE. BUT WE START

HANWELL REPORTING SERVICE

1 WITH THE PROCESS. WE FINISH THE RI/FS WHEN WE  
2 COULD HAVE SPENT TWO YEARS MESSING AROUND WITH  
3 TRYING TO NEGOTIATE AND FIND PEOPLE.

4 NOW BY THIS POINT IN TIME WE'VE USUALLY  
5 SPENT THE LAST TWO YEARS DOING MORE THOROUGH PRP  
6 SEARCHES SO THAT WE'RE READY TO DO NEGOTIATIONS  
7 AND DEAL WITH THOSE ISSUES AS WE SIGN THE RECORD  
8 OF DECISION AND WANT TO START PURSUING DESIGN AND  
9 IMPLEMENTATION. WE DO HAVE A FAIRLY LENGTHY LIST  
10 OF NAMES. ONE OF THE PROBLEMS IS USUALLY  
11 DOCUMENTATION IS NOT VERY GOOD. AND MOST OF  
12 THOSE PEOPLE WERE VERY --

13 MS. BROWN: WHY NOT?

14 MR. ROGERS: THESE ARE RECORDS THAT WE  
15 JUST FIND. THERE'S NOT GREAT RECORDS FROM WHO  
16 SPENT WHAT WHERE. THE S.B.A. STILL HAS A LARGE  
17 CHUNK.

18 MR. MOSSER: BUT THE PEOPLE WHO TOOK  
19 THE BATTERIES OUT OF THE CARS AND SENT THEM OVER  
20 THERE ARE THE ONES THEY'RE GOING TO GO LOOKING  
21 FOR.

22 MR. ROGERS: WE HAVE AVOIDED THAT FOR  
23 OBVIOUS REASONS.

24 MS. BROWN: BUT THERE WAS SEVERAL  
25 COMPANIES THAT WERE BACKING THIS.

HANWELL REPORTING SERVICE

1                   MR. ROGERS:  ULTIMATELY WE WILL SPEND  
2   THE MONEY TO TAKE ACTION SHOULD WE NOT BE ABLE TO  
3   GET SOMEBODY ELSE TO DO IT.  WE'RE NOT GOING TO  
4   ARGUE IN COURT FOREVER.  WE'RE GOING TO GO AHEAD  
5   AND START THE WORK.  WE CAN ALWAYS GO BACK AND  
6   PURSUE RECOVERY OF THE MONEY.  IN ALL CASES WHERE  
7   WE SPENT MONEY A SIGNIFICANT REVIEW OF THE RECORD  
8   IS MADE TO DETERMINE WHETHER OR NOT THERE IS  
9   ANYONE TO GO BACK AND PURSUE FOR THOSE COSTS.

10                  MS. BROWN:  I NOTICE THEY SAY YOU  
11   CAN'T GET BLOOD OUT OF A TURNIP.  I'M ONE WHO  
12   THINKS THOSE PEOPLE OUGHT TO BE MADE TO PAY FOR  
13   THIS.

14                  MR. ROGERS:  WE'LL HAVE TO FOLLOW THE  
15   LEGAL PROCEDURES AND WHERE WE CAN GO AFTER THEM  
16   WE'LL GO.

17                  MR. FOGLE:  I'VE GOT A FEW QUESTIONS.  
18   JOHN VOGLE.  MY FIRST QUESTION IS WHO IS THE  
19   DEED, HOLDS THE DEED TO THAT PROPERTY AT THIS  
20   TIME?  WHO IS THE RESPONSIBLE PARTY?

21                  MR. ROGERS:  WELL, THERE'S A LOT OF  
22   PRP'S BUT WHO HOLDS THE DEED, WE'VE GOT AN  
23   ATTORNEY WORKING ON THAT NOW.

24                  MR. FOGLE:  THE QUESTION THAT I HAVE  
25   IS IF THAT PERSON WHETHER IT BE A BANK OR AN

HANWELL REPORTING SERVICE

1 INDIVIDUAL OR WHATEVER, HAVE THEY BEEN ASKED TO  
2 ATTEND THESE MEETINGS AND WHY DIDN'T THEY ATTEND  
3 THEM?

4 MS. JONES: I DON'T THINK WE CAN FORCE  
5 PEOPLE -- PLEASE CORRECT ME IF I'M WRONG -- TO  
6 ATTEND.

7 MR. FOGLE: I DON'T THINK FORCING --

8 MS. JONES: YOU'RE TALKING ABOUT THE  
9 NEGOTIATIONS?

10 MR. ROGERS: THE QUESTION IS WHETHER  
11 WE NOTICED ANYBODY WHO IS A PRP ABOUT THE  
12 MEETING.

13 MS. JONES: YES, WE DID. WE DID SEND  
14 THEM THE PROPOSED PLAN OF ACTION.

15 MR. FOGLE: AND THEY NEGLECTED OR  
16 DECLINED TO ATTEND AS FAR AS I KNOW. NOBODY IN  
17 HERE IS GOING TO LAY CLAIM TO THAT.

18 MS. PEURIFOY: WE CAN'T SAY THAT WE  
19 ACTUALLY NOTICED WHO OWNS THE PROPERTY RIGHT NOW.  
20 WE DID HAVE A LIST OF POTENTIALLY RESPONSIBLE  
21 PARTIES.

22 MR. FOGLE: WELL, I'M NOT CONCERNED  
23 WITH THEM. I THINK YOU ALREADY KNOW WHO THEY  
24 ARE. I THINK THE PEOPLE -- IF IT WAS FINANCED  
25 THROUGH THE BANK AND IT WAS DECLARED IN A

HANWELL REPORTING SERVICE

1       BANKRUPTCY IT'S GONE INTO RECEIVERSHIP.   WHAT I  
2       WANT TO KNOW IS WHO AFTER THIS IS OVER WITH IS  
3       GOING TO HOLD TRE DEED TO THAT PROPERTY.

4               MS. JONES:   IN OTHER WORDS YOU WANT TO  
5       KNOW IF IT IS A BANK WHICH BANK IS HOLDING IT?

6               MS. BROWN:   THAT'S RIGHT.

7               MR. FOGLE:   AND THE REPLY TO -- WHAT I  
8       WOULD LIKE TO KNOW IS WHY AREN'T THEY  
9       REPRESENTED? IF I COULD HAVE A NAME I WOULD CALL  
10      THEM AND ASK THEM.   YOU KNOW? I THINK THAT THEY  
11      OWE AN OBLIGATION TO THIS COMMUNITY TO GET  
12      INVOLVED IN THIS PROGRAM.   THAT IT HAS BEEN  
13      TOTALLY CARRIED BY A FEW PEOPLE IN THIS  
14      COMMUNITY.   AND FINALLY ARRIVED AT THIS POINT  
15      WHERE THEY ARE.   THE OTHER QUESTION IS UP TO THIS  
16      POINT FROM HERE ON IF YOU SPEND THE MAXIMUM  
17      AMOUNT YOU'RE GOING TO SPEND \$900,000.   HOW MUCH  
18      HAVE YOU SPENT UP TO THIS POINT?   AND MY QUESTION  
19      TO THE STATE REPRESENTATIVES OVER THERE IS HOW  
20      MUCH HAVE YOU SPENT UP TO THIS POINT?   ARE WE AT  
21      A PLACE OF TWO MILLION, THREE MILLION, FOUR  
22      MILLION DOLLARS ON 1.5 ACRES?

23              MS. JONES:   AS FAR AS THE RI/FS AND  
24      BASED ON THE DATA -- AND THIS IS JUST AN ESTIMATE  
25      BECAUSE EVEN NOW WE ARE INCURRING COSTS BUT I

              HANWELL REPORTING SERVICE

1 THINK IT WAS APPROXIMATELY \$524,000. THAT  
2 CONSISTS OF ALL THE INVESTIGATION THAT WAS DONE  
3 PRIOR TO EVEN GETTING SITE RANKED ON THE NATIONAL  
4 PRIORITY LIST. ACTUALLY THERE WERE TWO. THEY  
5 WENT BACK AND REVISED IT. SO APPROXIMATELY  
6 THAT'S THE COST.

7 MR. ROGERS: A DECENT CHUNK OF THAT  
8 WAS SPENT JUST TO GET IT ON THE NPI.

9 MS. JONES: RIGHT. JUST TO RANK IT.

10 MR. ROGERS: I FORGET THE COST OF THE  
11 STUDY BUT THE RELATIVE COSTS OF THE STUDY WERE  
12 TRIED TO BE KEPT TO A MINIMUM.

13 MS. BROWN: HE'S NOT TALKING ABOUT THE  
14 COST OF THE STUDY. HE'S TALKING ABOUT THE CLEAN  
15 UP.

16 MR. FOGLE: WELL, I'M TALKING ABOUT  
17 THE TOTAL. JUST LEAVING IT THERE YOU ARE RIGHT  
18 NOW CLOSE TO 1.5 MILLION DOLLARS. I'M TALKING  
19 ABOUT JUST THE FEDERAL SUPERFUND SITE WHAT THE  
20 FEDERAL GOVERNMENT HAS TIED UP IN IT. WORST CASE  
21 IT WOULD BE 1.5 MILLION DOLLARS, THEREABOUTS GIVE  
22 OR TAKE A COUPLE HUNDRED THOUSAND. WE CAN TALK  
23 ABOUT THAT. I WOULD LIKE TO KNOW IF ANYONE FROM  
24 THE STATE HAS AN IDEA -- THEY REMOVED SOIL. THEY  
25 DID TESTING. THEY SPENT TIME. WOULD YOUR

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1 ESTIMATE BE THAT YOU SPENT ANOTHER \$500,000 AT  
2 THAT SITE?

3 MR. STEWART: WE WERE JUST DISCUSSING  
4 WHETHER IT WAS THE STATE WHO SPEND THE MONEY OR  
5 WHETHER THE STATE OVERSAW THE COMPANY ACTUALLY DO  
6 SOME OF THE EXCAVATION. THE ONES OF US HERE  
7 TONIGHT AREN'T SURE. I CAN TELL YOU FOR SURE IT  
8 WOULD HAVE BEEN MUCH LESS THAN \$500,000.

9 MR. ROGERS: THAT CLEAN UP WAS DONE IN  
10 CHEAP TIMES. THE MID '80S.

11 MR. STEWART: I WOULD SAY PROBABLY  
12 LESS THAN \$500,000.

13 MR. FOGLE: I THINK THAT EVERYBODY  
14 SHOULD TAKE A LESSON FROM THIS. WHEN THEY SEE  
15 SOMETHING LIKE THIS GOING ON AND THEY'VE GOT A  
16 QUESTION YOU KNOW WE NEED TO GET INVOLVED WITH  
17 THESE STATE FOLKS AND FEDERAL FOLKS. YOU KNOW  
18 SOMEWHERE IN HERE I WOULD BE CONVINCED THAT TWO  
19 MILLION DOLLARS HAS BEEN SPENT ON 1.5 ACRES. I  
20 HAVE 1.5 ACRES I'LL LET YOU HOLD FOR TWO MILLION  
21 DOLLARS TONIGHT.

22 MS. BROWN: THE PEOPLE THAT OWNED IT  
23 DOWN THERE HAD A MILLION DOLLAR INSURANCE POLICY  
24 ON THE PROPERTY FOR SUCH --

25 MR. ROGERS: UNFORTUNATELY FROM WHEN  
HANWELL REPORTING SERVICE

1 WE FIRST STARTED WORKING ON THE SITE UNTIL NOW  
2 THE COST OF CLEANING UP THE SITE IS MUCH MORE  
3 SIGNIFICANT. I WOULD GUESS THE STATE CLEAN UP  
4 WOULD HAVE BEEN \$50, 100,000. NOW, IT'S HARD TO  
5 SAY. ONE OF THE THINGS ON THE DISPOSAL LIST MY  
6 GUESS FROM HAVING CLEANED UP SITES OVER THE YEARS  
7 THAT SOIL WOULDN'T BE CONSIDERED HAZARDOUS WASTE  
8 BECAUSE OF THE LEACHABILITY TEST AND THEREFORE IT  
9 WILL GO TO AN INDUSTRIAL GRADE LANDFILL. IT  
10 WON'T GO TO A MUNICIPAL LANDFILL I DON'T BELIEVE.  
11 BUT THERE ARE SOME INDUSTRIAL LANDFILLS THAT ARE  
12 AROUND AND MORE SECURE AND APPROPRIATE FOR THAT  
13 KIND OF MATERIAL AT A MUCH SIGNIFICANTLY REDUCED  
14 COST.

15 MR. GRANT: WHAT DO YOU HAVE TO DO --

16 THE REPORTER: I CAN'T HEAR BACK HERE.

17 MR. ROGERS: HIS QUESTIONS WAS WHAT DO  
18 YOU HAVE TO DO TO DECONTAMINATE THE SOIL THAT HAS  
19 LEAD IN IT. THERE'S REALLY SOME REAL  
20 SOPHISTICATED TECHNOLOGIES THAT ARE INVOLVED THAT  
21 AREN'T APPROVED TO WORK IN THE FIELD YET WHERE  
22 YOU ACTUALLY WASH THE EXCAVATION AND THEN DISPOSE  
23 OF IT. WE DON'T REALLY USE A LOT OF THAT YET.  
24 SO WHAT YOU WANT TO SEE HAPPEN IS THE SOIL IS  
25 SHIPPED TO A DISPOSAL FACILITY AND IF IT DOES

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1 EXCEED THE CHARACTERISTIC LEACHABILITY TEST THEN  
2 IT MIGHT VERY WELL HAVE TO BE DEEMED HAZARDOUS.  
3 IT DOESN'T MOVE IN WATER. IT'S NOT GOING  
4 ANYWHERE. WE'VE DONE THAT WHERE IT'S APPROPRIATE  
5 AT SOME SUPERFUND SITES AND WE'VE ALSO TAKEN IT  
6 OFF SITE. YOU JUST TAKE IT OFF AND LANDFILL IT.  
7 YOU MENTIONED INCINERATION. INCINERATION DOESN'T  
8 WORK ON METALS. THEY JUST BLOW OUT THE STACK. SO  
9 THAT WOULDN'T BE APPROPRIATE.

10 MS. BROWN: WHAT'S PROZZOLAN, HOW  
11 WOULD IT STABLIZE LEAD?

12 MS. JONES: BASICALLY IT'S PRETTY MUCH  
13 THE SAME OR SAME TYPE OF TEXTURE AS CONCRETE.  
14 IT'S NOT LITERALLY THE SAME AS THIS CONCRETE.

15 MS. BROWN: BUT IT STABLIZES THE LEAD  
16 SO IT WON'T FLOW?

17 MR. ROGERS: IT MAKES IT SO IT'S NOT  
18 SOLUABLE AND CAN'T LEACH.

19 MR. MOSSER: I MOVE WE ADJOURN.

20 MR. STEWART: A COUPLE PEOPLE  
21 MENTIONED THINGS ABOUT PRIVATE WELLS. ARE THERE  
22 ANY PEOPLE HERE WHO ARE CURRENTLY DRINKING WELL  
23 WATER? IF WE CAN HAVE YOUR NAMES AFTERWARDS,  
24 ADDRESS AND PHONE NUMBER. DHEC CAN COLLECT  
25 SAMPLES FROM PRIVATE WELLS AND HAS THEM ANALYZED.

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1                   MR. HICKS: I APPRECIATE THAT.

2                   BECAUSE I'D LIKE TO KNOW.

3                   MR. MOSSER: HOW ABOUT THE GENTLEMAN  
4                   HERE THAT'S CONCERNED ABOUT HIS CHILDREN AND THE  
5                   LEAD CONTENT AND WANTING THEM RETESTED. A SIMPLE  
6                   PHYSICIAN CAN DO THAT WITH A BLOOD TEST.

7                   MS. HOLLIS: I'M ELIZABETH HOLLIS.  
8                   AND DHEC DID SEND A NURSE OUT TO COLLECT THE  
9                   BLOOD SPECIMENS OF THE CHILD IN THE COMMUNITY AT  
10                  THAT TIME. I THINK IT WOULD BE A GOOD IDEA AS A  
11                  FOLLOW-UP SUMMARY IF THIS IS GOING TO BE RESOLVED  
12                  IN ANY WAY TO FOLLOW-UP ON THOSE CHILDREN OR  
13                  PROBABLY I'M SURE NOW ADULTS WHO HAD THESE LEVELS  
14                  DRAWN.

15                  MS. BROWN: DHEC DOES HAVE THAT RECORD  
16                  AT THE DHEC OFFICE.

17                  MR. ROGERS: THAT'S AN APPROPRIATE  
18                  FUNCTION OF DHEC. WE DON'T LIKE TO SPEAK FOR  
19                  THEM. THERE'S SOME THINGS WE CAN PURSUE AND TALK  
20                  ABOUT TO THAT END. OBVIOUSLY THE EXPOSURE OF  
21                  BURNING BATTERIES AND DOING OTHER THINGS WAS  
22                  OCCURRING THEN AT ITS MAXIMUM EXTENT AND IF THEY  
23                  DID BLOOD WORK THEN YOU SHOULD HAVE SEEN SOME  
24                  ACCUMULATION THEN.

25                  MS. BROWN: BUT EVEN THEN IT WOULD NOT  
  
                  HANWELL REPORTING SERVICE

1       SHOW UP AS MUCH AS LATER.

2                   MR. HAYES:  THAT'S NOT TRUE.  IT'S  
3       REVERSIBLE.

4                   MR. ROGERS:  IT'S GOING TO SHOW UP  
5       PRETTY QUICKLY IF YOU'RE BREATHING IT.

6                   MS. BROWN:  IT WOULD SHOW UP  
7       IMMEDIATELY?

8                   MR. ROGERS:  YES.

9                   MR. HAYES:  HERE'S WHAT WE'RE LOOKING  
10      AT.  CHILDREN NEAR THE SITE MIGHT HAVE BEEN  
11      TESTED THEN.  AND WHATEVER THEIR BLOOD LEVELS  
12      WERE IF THEY DON'T LIVE NEAR THE SITE NOW THEN  
13      OBVIOUSLY THEIR EXPOSURE HAS CEASED IF THEY'RE  
14      GROWN UP.

15                  MS. BROWN:  WELL, THEY STILL DO.

16                  MR. HAYES:  WELL, I'M NOT SAYING IT'S  
17      A BAD IDEA TO MAYBE TEST THEM.

18                  MS. BROWN:  THAT'S WHY I ASKED E.P.A.  
19      IF THEY WOULD RETEST THOSE CHILDREN.

20                  MR. HAYES:  BUT IF THE EXPOSURE IS NOT  
21      CONTINUING THEN THEIR BLOOD LEVELS WOULD HAVE  
22      DROPPED.

23                  MS. BROWN:  IT STILL WOULDN'T HURT  
24      E.P.A. TO TEST THOSE CHILDREN.

25                  MR. ROGERS:  THAT'S SOMETHING WE CAN  
                    HANWELL REPORTING SERVICE

1       LOOK INTO.  THERE ARE SOME OTHER AVENUES TO  
2       PURSUE THAT.  ANY OTHER QUESTIONS?  IF YOU CAN IF  
3       YOU THINK OF ANYTHING ELSE YOU CAN STILL USE I  
4       GUESS THE BACK OF THE FACT SHEET AND SEND IN ANY  
5       ADDITIONAL QUESTIONS OR CONCERNS TO US.

6               MS. PEURIFOY:  CALL US AT THE 800  
7       NUMBER IF YOU HAVE ANY QUESTIONS.  DECEMBER 22ND  
8       IS THE END OF THE COMMENT PERIOD.

9               MR. ROGERS:  WE DON'T BRING ALL THE  
10       DETAILED TECHNICAL DOCUMENTS TO THESE MEETINGS  
11       BECAUSE IT WOULD BE TOO LONG BUT THEY ARE  
12       AVAILABLE IN THE REPOSITORY AND CYNTHIA CAN TELL  
13       YOU WHERE THAT IS.

14              MS. PEURIFOY:  THANK YOU ALL FOR  
15       COMING.  THANK YOU.

16  
17                       (THEREUPON, AT 9:20 P.M.  
18                       THE TAKING OF THE FOREGOING  
19                       HEARING WAS CONCLUDED)

20  
21  
22  
23  
24  
25

HANWELL REPORTING SERVICE

1 CERTIFICATE OF REPORTER

2  
3 STATE OF SOUTH CAROLINA )

4 COUNTY OF LEXINGTON )

5  
6 I, SHEILA STAGGS, CERTIFIED COURT REPORTER  
7 (GA) AND NOTARY PUBLIC IN AND FOR THE STATE OF SOUTH  
8 CAROLINA AT LARGE, DO HEREBY CERTIFY THAT I WAS  
9 AUTHORIZED TO REPORT THE E.P.A. HEARING  
10 AT THE TIME AND PLACE HEREINABOVE SET FORTH; THAT  
11 THE WITNESSES WERE FIRST DULY SWORN BY ME TO TELL THE  
12 WHOLE TRUTH; AND THAT THE FOREGOING PAGES NUMBERED  
13 3 THROUGH 104 INCLUSIVE, CONSTITUTE A TRUE AND  
14 CORRECT TRANSCRIPTION OF MY STENOGRAPHIC REPORT OF  
15 THE TESTIMONY OF SAID WITNESS.

16 I FURTHER CERTIFY THAT I AM NEITHER  
17 ATTORNEY NOR COUNSEL FOR, NOR RELATED TO OR  
18 EMPLOYED BY ANY OF THE PARTIES CONNECTED TO THE  
19 APPLICATION, NOR AM I FINANCIALLY INTERESTED IN  
20 THE APPLICATION.

21 WITNESS MY HAND AT COLUMBIA, SOUTH  
22 CAROLINA, THIS 21ST DAY OF, DECEMBER 1994.

23 <IMG SRC 0495223DD>

24 \_\_\_\_\_  
SHEILA STAGGS, CCR (GA)

25 MY COMMISSION EXPIRES: OCTOBER 29, 2002.

HANWELL REPORTING SERVICE

APPENDIX B

STATE OF SOUTH CAROLINA CONCURRENCE LETTER  
PALMETTO RECYCLING SUPERFUND SITE

South Carolina  
DHEC  
Department of Health and Environmental Control

2600 Bull Street, Columbus, SC 29201

Commissioner: Douglas E. Bryant

Board: Richard E. Jabbour, DDS, Chairman  
John H. Burriss  
Robert J. Stripling, Jr., Vice Chairman  
William M. Hull Jr., MD  
Sandra J. Molander, Secretary  
Roger Leaks, Jr.  
Burnet R. Maybank, III  
Promoting Health, Protecting the Environment

March 28, 1995

John H. Hankinson, Jr.  
Regional Administrator  
U.S. EPA, Region IV  
345 Courtland Street  
Atlanta, GA 30365

RE: Record of Decision  
Palmetto Recycling NPL Site  
Richland County

Dear Mr. Hankinson:

The Department has reviewed the revised Record of Decision (ROD) dated March 21, 1995 for the Palmetto Recycling site and concurs with the ROD. In concurring with this ROD, the South Carolina Department of Health and Environmental Control (SCDHEC) does not waive any right or authority it may have under Federal or State law. SCDHEC reserves any right and authority it may have to require corrective action in accordance with the South Carolina Hazardous Waste Management Act and the South Carolina Pollution Control Act. These rights include, but are not limited to, the right to ensure that all necessary permits are obtained, all clean-up goals and criteria are met, and to take a separate action in the event clean-up goals and criteria are not met. Nothing in the concurrence shall preclude SCDHEC from exercising any administrative, legal and equitable remedies available to require additional response actions in the event that: (1)(a) previously unknown or undetected conditions arise at the site, or (b) SCDHEC receives additional information not previously available concerning the premises upon which SCDHEC relied in concurring with the selected remedial alternative; and (2) the implementation of the remedial alternative selected in the ROD is no longer protective of public health and the environment.

The State concurs with the selected surface soil source control alternative of excavation of contaminated surface soil that exceeds the remediation level for lead, with verification sampling. The soil will be Toxicity Characteristic Leaching Procedure (TCLP) tested. If the soil exceeds the Land Disposal Restriction (LDR) of 5 ppm for lead, then the soil will be transported to a RCRA Subtitle C Facility where it will be pretreated in order to comply

<IMG SRC 0495223EE>

Mr. John H. Hankinson, Jr.  
Palmetto Recycling NPL Site  
March 28, 1995

with the LDRs. If the soil does not exceed the 5 ppm LDR, then the soil will be transported to a Subtitle D solid waste landfill and disposed of directly without pretreatment. The excavated area shall be backfilled with clean soil, properly recompact, and the land regraded to the natural slope. A vegetative cover will be established to minimize undue surface water runoff and minimize erosion. Groundwater monitoring will be conducted on an annual basis for at least five years to evaluate the site progress.

State concurrence on this remedial alternative is based on the alternative meeting all applicable clean-up criteria. This concurrence with the above selected remedy for the Palmetto Recycling NPL Site is contingent upon the State's above mentioned reservation of rights.

Sincerely,

<IMG SRC 0595223FF>  
R. Lewis Shaw, P.E.  
Deputy Commissioner  
Environmental Quality Control

RLS/amf

co: Hartsill Truesdale  
Keith Lindlet  
Gary Stewart  
Adrienne Felder  
Lewis Bedenbaugh, Central Midlands EQC